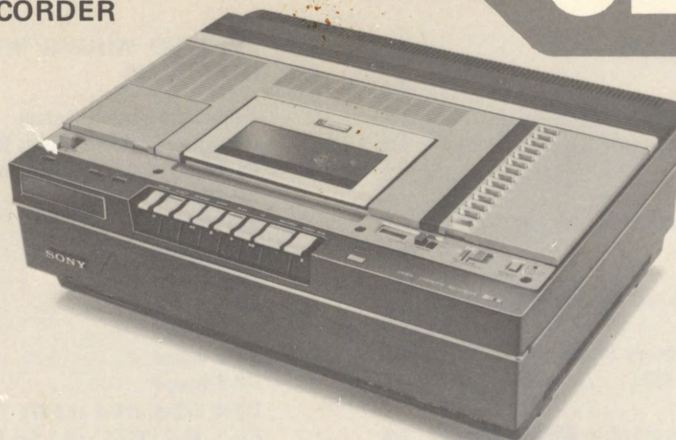


VIDEOCASSETTE RECORDER

SL-5400

VOL. 1



SPECIFICATIONS

General

Video recording system:	Rotary two-head helical scanning
Video signal:	EIA standard, NTSC color
Storage temperature:	−20°C to +60°C (−4°F to +140°F)
Operating temperature:	5°C to 40°C (41°F to 104°F)
Antenna:	75-ohm external antenna terminal for VHF 300-ohm external antenna terminals for UHF
Channel coverage:	VHF channels 2 –13 UHF channels 14 –83
VHF output signal:	Channel 3 or 4 (selectable) 75 ohms, unbalanced
Timer:	only for recording Electronic digital timer 12-hour-clock cycle synchronized with the power frequency
Power requirements:	120V ac ± 10%, 60 Hz ± 0.5%
AC OUTLET:	Unswitched max. 400W
Power consumption:	55W
Weight:	15.0kg (33 lb)
Dimensions:	493 x 162 x 376 mm (w/h/d) (19 3/4 x 6 1/2 x 15 inches)

Video

Input:	VIDEO IN: phono-type connector 1.0V(p-p), 75 ohms, unbalanced, sync negative
Output:	VIDEO OUT: phono-type connector 1.0V(p-p), 75 ohms, unbalanced, sync negative
Signal-to-noise ratio:	Better than 45dB

Audio

Input:	AUDIO IN: mini jack 100k ohms, −10dB MIC: mini jack −60dB, suitable for microphone with 600-ohm impedance
Output:	AUDIO OUT: mini jack Less than 10k ohms, −5dB (100k ohm load), unbalanced
Frequency response:	β II : 50 – 10,000 Hz β III : 50 – 7,000 Hz
Signal-to-noise ratio:	Better than 40dB

Tape transport

Tape speed:	β II : 2.0cm/sec., β III : 1.33cm/sec.
Maximum recording time:	180 min. in β II mode, 270 min. in β III mode (with Sony L-750 cassette)
Fast forward time:	Within 3 1/2 min. (L-500)
Rewind time:	Within 3 1/2 min. (L-500)

Accessories supplied

Betamax videocassette tape
External antenna connector EAC-24 (75-ohm to 300-ohm matching transformer)
External antenna connector EAC-25 (300-ohm to 75-ohm matching transformer)
75-ohm coaxial cable with F-type connectors (2m)
300-ohm ribbon-type lead in (2m)
βetaScan control

Optional accessories

Extension cable RFC-8
Betamax video cassette tape L-250, L-500, L-750

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND ⚠ MARK ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SONY®

SERVICE MANUAL

SONY

REPLACEMENT PROCEDURE FOR REW EXPENDABLE PARTS KIT G (T-988-022-81)

Models: SL-5400, SL-5600, SL-5800, SL-5000, SL-5010, SL-5100

KIT G includes:

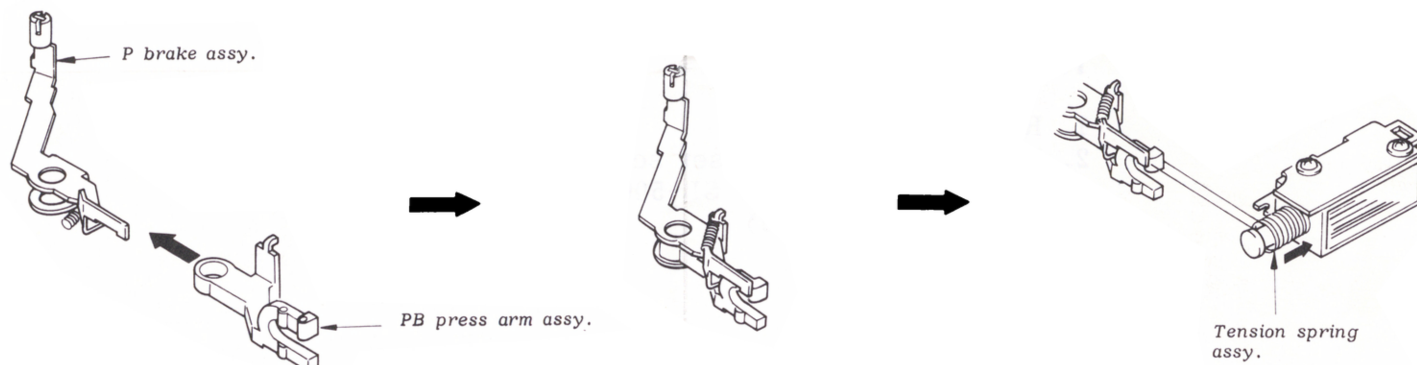
1. REW idler assy.
2. Midway pulley #1 w/set screw (3x8) w/hex hole
3. FF pulley assy. for SL-5000
4. Washer (3.0 x 0.5)
5. T reel assy.
6. S reel assy.
7. T brake assy.
8. P brake assy.
9. PB press arm
10. Tension spring
11. Ratchet claw assy.
12. Midway pulley shaft

		PARTS NEEDED												
Model	Serial Numbers	1 IDLER	2 MIDWAY PULLEY	3 FF PULLEY	4 WASHER	5 T REEL	5' T REEL TIRE	6 S REEL	7 T BRAKE	8 P BRAKE	9 PB PRESS ARM	10 SPRING	11 RATCHET CLAW	12 SHAFT
SL-5400	10,001-15,000 200,001-217,000	●	●			●		●	●	●	●	●	●	●
SL-5400	43,001-169,500	●	●		●	●								
SL-5600	17,500-85,000	●	●		●	●								
SL-5800	all	●	●		●	●								
SL-5000	all	●		●	●		●							
SL-5010	all	●		●	●		●							
SL-5100	all	●		●	●		●							

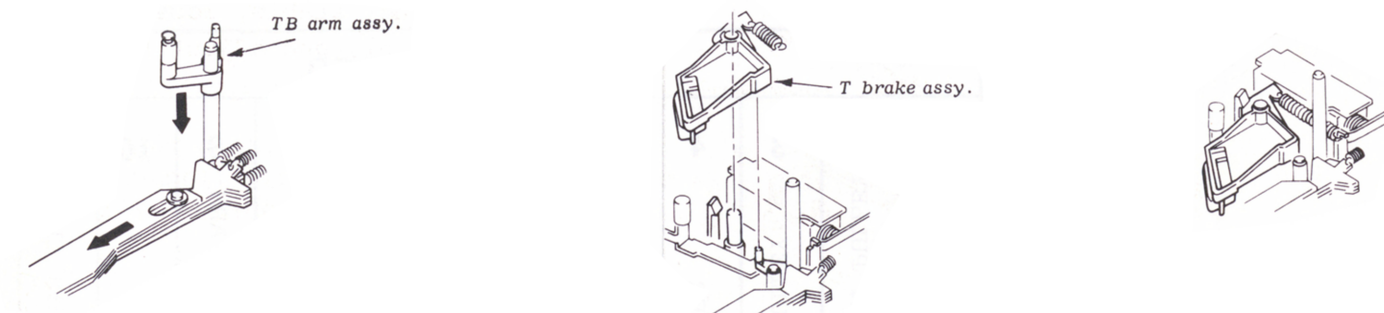
Replacement Procedure

SL-5400 Serial Nos. 10,001 - 15,000, 200,001 - 217,000

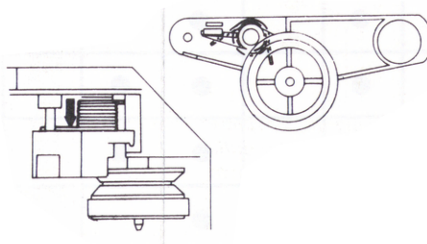
- Assemble the P brake assy. and PB press arm as shown below. Install this assembly and the Tension spring together with the Brake solenoid. (It is necessary to remove the solenoid holding screw - tighten it after installation.)



- Replace the T brake assy. after reinstalling TB arm assy that was previously removed.



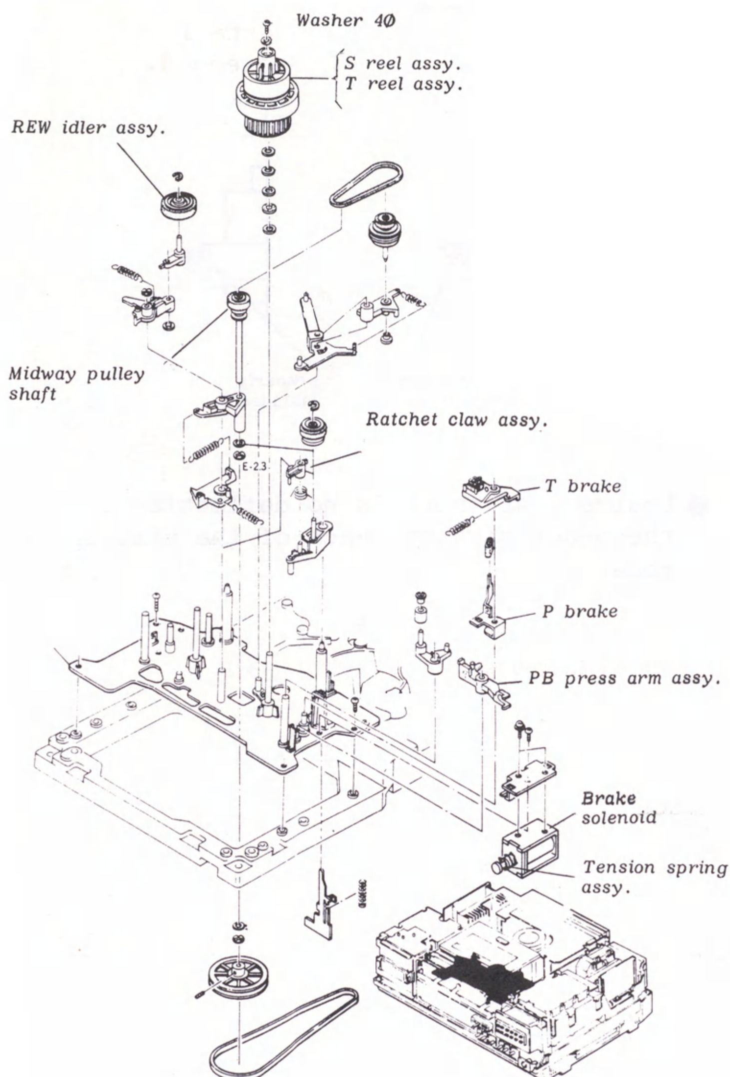
- Replace Ratchet claw by removing E idler arm assy. Install ratchet claw as shown below, and reinstall E idler arm assy.



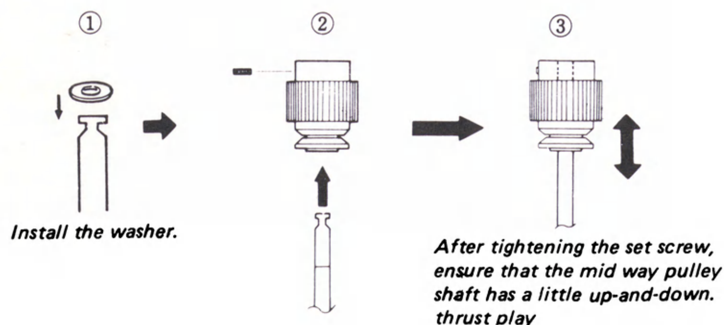
- Replace S reel assy. Take care not to leave oil, grease or fingerprints on Reel assy.

Replacment Procedure

SL-5400, SL-5600, SL-5800



● Replace the Mid way Pulley.

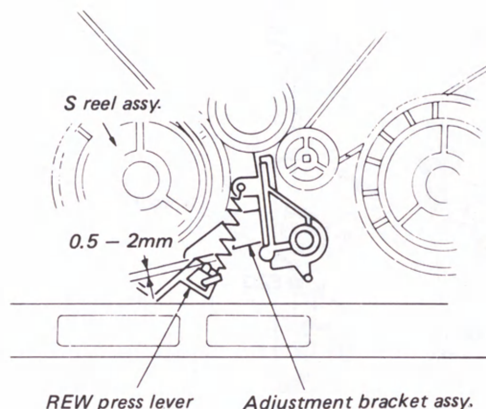


● Replace the Rewind idler assy. and T reel assy. The rubber tires should be handled with care so as not to leave oil stains and finger prints.

● Clean Midway, or FF pulley, REW idler, FWD limiter assy., S reel table assy. and T reel table.

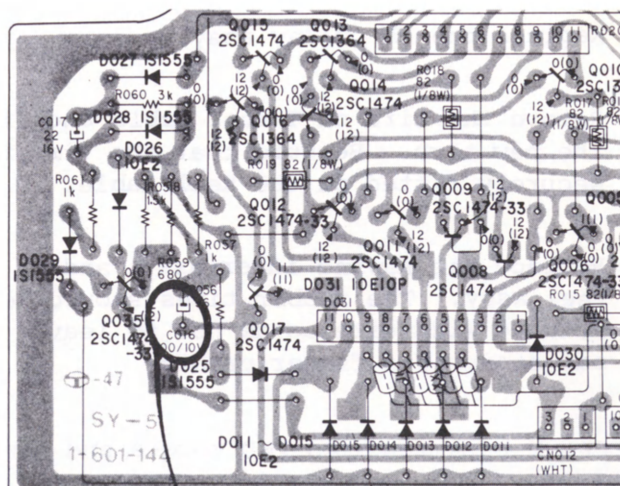
● Check back tension, FWD torque and REW torque.

● Adjust REW solenoid stroke as shown.



● Check the composite shooting picture. If it is not stable, loosen two screws (+PSW.6 x 5), and adjust the position of the PB plunger.

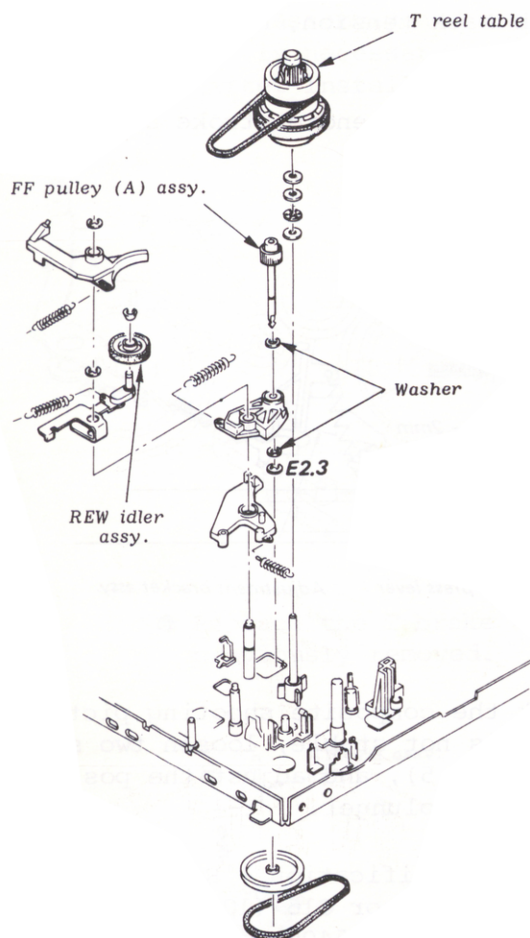
● Circuit Modification - Remove electrolytic capacitor C16 (100µF/10V) from the SY-5 Board (SL-5400) or SY-12 Board (SL-5600, SL-5800)



Remove this capacitor.

Replacement Procedure

SL-5000, SL-5010, SL-5100



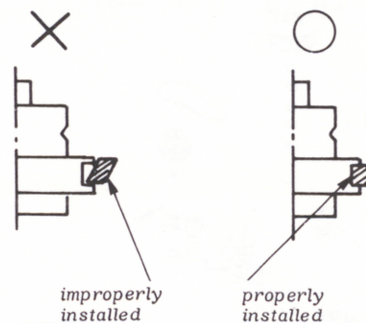
● Replace the FF pulley assy.

● Remove the tire on T reel table and fit the new tire. Be sure that the tire is securely fitted on the Reel table.

● Replace the Rewind idler assy. and T reel assy. The rubber tires should be handled with care so as not to leave oil stains and finger prints.

● Check back tension, FWD torque and REW torque.

● Clean Midway, or FF Pulley, REW idler, FWD limiter assy., S reel table assy. and T reel table.



● Ensure that there is no deflection on the outer circumference of the tire in FF mode.

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SECTION 1
GENERAL

1-1. GENERAL

Video Cassette Recorder SL-5400 can make a five hour recording (when the L-830 tape is used) and features a convenient Betascan function. This function is especially effective in the playback of the five hour recording.

Main Features include:

- FIVE HOUR RECORD AND PLAYBACK
  The SL-5400, in combination with the L-830 tape using the BETA III mode can produce a continuous recording that is five hours long, (Recording manual time selection (BETA III or BETA II) is provided and the playback tape speed is switched automatically.)
- SOFT PIANO TOUCH FUNCTION BUTTON
  The FUNCTION buttons can be operated with light pressure, because of the use of solenoids.
- REMOTE CONTROL
  This video recorder has a REMOTE socket for the Betascan Control unit. The PAUSE and the Betascan (FWD/REV) functions can be controlled remotely as well as at the SL-5400.
- SELECTABLE PLAYBACK SPEED
  The following playback speeds can be selected.

[Betascan (FORWARD/REVERSE)]

The played back tape can be fast-forwarded and rewound with visible high-speed pictures, at an average seven times with BETA II and ten times with BETA III of the normal speed when the FF or REWIND button is depressed in the PLAY mode, and a desired picture can be found rapidly and easily.

[STILL PICTURE PLAYBACK]

When the PAUSE button is depressed during PLAY mode, a still picture will appear on the TV screen.

[FAST PLAY]

When the FAST PLAY button is pressed during playback, playback speed will be three times normal speed. The noise band may appear on the fast-play picture. In such a case, turn the TRACKING control until the best picture is obtained.

- THREE DAY PROGRAMMING TIMER
  The video recorder operation can be programmed within a three day set-up period with the incorporated timer to record at a later time a selected time segment of program.
- INCORPORATED RF MODULATOR
  The incorporated RF modulator enables the video recorder to present its playback picture on a common domestic TV receiver. Either channel 3 or 4 can be selected for the playback picture with the RF channel selector switch.
- AUDIO DUB FUNCTION
  Sound can be dubbed onto the recorded tape during playback.
- ANTENNA AUTOMATIC SWITCHING FUNCTION
  The PICTURE SOURCE switch is connected to the TAPE position automatically when the PLAY mode is set up and reset to the TV position also automatically, when the power to the SL-5400 is turned off.
- TELEVISED PROGRAM WATCHABLE WITH VTR CONNECTED
  A televised program from the antenna can be watched on the television receiver while the connected VTR is operated in any modes except the PLAY mode.
- PAUSE AUTOMATIC RELEASE FUNCTION
  This function releases the PAUSE mode for tape protection about five minutes after the mode is set up, if the PAUSE button is not released manually before this time.
- SIMPLE RECORDING OPERATION FOR HIGH PICTURE QUALITY
  The input signal automatic adjusting circuits for the video and audio record signals, the color and B/W automatic switching circuit, and other various circuits enable a non-professional person to make recordings with high picture quality.

1-2. BRIEF CIRCUIT DESCRIPTION

The major circuit boards of the SL-5400 and their functions are listed below.

PS-4 board:	DC regulated power supply circuit
SY-5 board:	System control circuit
SY-6 board:	Antenna switching camera circuit
SA-3 board:	Audio signal record/playback process Servo circuit
YC-4 board:	Y signal & chroma signal record/playback processing circuits Servo reference signal generating circuit,
RP-1 board:	Down-converted chroma signal and Y-FM signal record/playback circuits
IF-7 board:	VIF, SIF and AFC circuits
TS-4 board:	ET (=Electronic Tuning) varactor tuner control circuit
DS-3 board:	Betascan (FORWARD and REVERSE) circuit
DT-4 ~ DT-7 boards:	Program timer circuits
CR-6 board:	Vertical drive insertion circuit

Numerous highly integrated circuits and modules are utilized in the electronic circuit of the SL-5400. The heavy use of integrated circuits and modules makes possible the reduction in the required number of discrete components. Furthermore, overall performance characteristics are made more uniform from unit to unit and general performance quality is improved. Total power consumption is also reduced.

The circuits of the system control and the timer employ microcomputers to control the complicated functions of these sections of the video recorder.

The ICs used and their functions in the verious circuits are listed in the table below.

SY-5 board

BX342	Auto stop circuit (Tape end detector)
μPD546C	System control circuit
TC4001 BP	Pause control

SA-3 board

TA7120P	CTL signal & FG signal amplifier circuit
CX143A	Capstan servo circuit
CX186	Drum servo circuit
TC4011 BP	Switch
TC4027	1/3 counter

YC-4 board

BX358	Hard clamp (H shift correction) circuit
CX130	Electronic switch
CX135	Noise canceller (II)
CX187A	Y processing circuit
CX188A	Color processing circuit
CX196A	Color sync circuit
M58478P	Servo reference counter
BX364	VIRS slicer

RP-1 board

CX134A	RF playback amplifier, RF switcher, Dropout compensator

IF-7 board

CX095C	SIF (SOUND I.F.)
CX177B	VIF (VIDEO I.F.), DETECTOR, AGC
M5135P	AFT

DT-5 board

μPD553C-020	Timer control circuit

Video circuitry

The video signal system consists of the circuitry on the YC-4 board, the RP-1 board and the CR-6 board.

The circuitry on the RP-1 board includes the record amplifier to supply the down-converted chroma signal and the Y-FM signal to the video heads during recording, the head amplifiers, to amplify the signals played back from the video heads, and the CX134A, I.C. In the playback mode, in CX134A (IC5001), the amplified signal is separated into the low chrominance signal and the Y-FM signal, and the separated signals are supplied to the YC-4 board.

The YC-4 board, major board of the video system, includes the input and output connectors and the selector switch. The circuitry on the YC-4 board consists of the luminance signal circuit (CX135, IC6 & CX187, IC1), the chroma system circuit (CX188 & CX196), the 4.27 MHz generating circuit, and the servo reference signal generating circuit (M58478P).

In the record mode, the input video signal enters the AGC amplifier in CX187 passes through additional circuitry and becomes the E-E output. At the same time, any color in the signal goes through a comb filter. One comb filter output is through Q36 and Q37 the chroma component is eliminated and the remaining luminance signal is coupled back to CX187 (IC1). This Y signal is subsequently supplied to the clamp circuit. When the signal is B/W, it is supplied directly to the clamp circuit without going through the comb filter circuitry.

The Y signal passed through the clamp circuit is returned to CX187, where it is FM-modulated, via the non-linear emphasis circuit. The luminance FM signal is shifted by 1/2 fH for the corss talk offset.

The chroma signal passed through the ACC amplifier is supplied to the converter in CX188 where it is down-converted to be the 688 kHz chroma signal and supplied to the RP-1 board, as is the Y-FM signal.

In the playback mode, the Y-FM signal from the RP-1 board enters CX187 (IC1) and CX135 (IC6). The signal goes to the FM demodulator, the low pass filter, the noise canceller (II) and the de-emphasis circuit. The output from the de-emphasis circuit goes through the AGC amplifer and the noise canceller (I) in the CX187 and is added to the 3.58 MHz chroma signal from the chroma processing circuit CX188 (IC2) to become the composite output video signal.

The BETA II and BETA III modes are switched by the signal from the SA-3 board. The tape speed is switched by the RECORD TIME switch in the record mode and it is switched automatically in the playback mode. The high speed ACC circuit operates in the playback mode with PAUSE and BETASCAN, other than the standard speed playback, so as to insert a wider vertical sync signal on the CR-6 board as the output video signal is developed.

System control circuitry

The system control circuitry consists of the circuits on the SY-5 and the SY-6 boards. The SY-5 board circuits are the ON-OFF control circuits for the capstan motor and the drum motor, the solenoid control circuit, the pause control circuit, the tape end sensor circuit, the remote control circuit, and the protection circuit for tape slackness. The SY-6 board circuitry includes the control circuit of the ANT select switch for switching the VHF output of the video cassette recorder and the televised signal and the control circuit of the camera pause.

Servo circuitry

1. **Drum servo circuit**
   The drum servo circuit is located on the SA-3 board and the drive circuit on the SY-5 board. The drum is driven directly by the drum motor.
   The drum rotation is kept at a constant speed in the record mode by the PG signal (30 Hz) obtained from the PG coil. The phase of the PG signal is compared with that of the vertical sync signal (VD) separated from the video input signal in order to maintain a constant rotational phase of the drum. The VD signal is counted down to 1/2 and the counted-down VD signal is recorded as the CTL signal.

2. **Capstan servo circuit**
The capstan servo circuit is located on the SA-3 board and the drive circuit on the SY-5 board. The functions of the capstan servo circuit are: ①to stabilize the tape speed, ②to switch the two tape speeds are required, and ③ to servo as the tracking servo in the playback mode. The capstan is driven by a DC motor. The speed servo signal developed by the capstan FG is applied to the DC motor. In the record mode, the signal phase of the FG attached to the capstan flywheel is compared with that of the vertical sync signal separated form the video input signal and the phase servo is applied to the DC motor in order to keep the capstan rotation at a constant speed.
In the playback mode, the phase of the CTL signal reproduced from the tape is compared with that of the 59.94 Hz reference signal obtained by the count-down of the 3.58 MHz (X'tal) on the YC-4 board. The servo system functions as the tracking servo to insure that the rotating video heads exactly re-trace the magnetic pattern recorded on the tape.

3. **Tape speed automatic switching circuit**
The tape speed automatic switching circuit is on the SA-3 board. In the record mode, the tape speed is switched with the RECORD TIME manual switch. In the playback mode, the tape speed automatic switching circuit detects that the intervals of the CTL signal recorded on the tape are different in the BETA II and the BETA III modes, and feeds the BETA II or BETA III signal to the capstan servo and the audio circuits, the tape speed being switched automatically.

4. **Blanking signal generating circuit**
The blanking signal generating circuit is located on the SA-3 board. This circuit blanks the video signal in the ordinary playback mode when a signal is not recorded on the tape but the blanking is released in the betascan or the pause mode. In the latter case, the audio is muted.

Playbacks other than ordinary playback

[Various Playbacks]

1. **FAST PLAY**
The triple speed playback circuit is arranged on the SA-3 board. This circuit actuates the speed servo so that the capstan motor rotates at the triple speed of the β II or the β III speed and actuates the phase servo so that the noise bands remain at the top and bottom of the picture in the manner that the phase of the 1/3 signal of the CTL signal (90 Hz in this case) is compared with that of the internal reference signal.

2. **STILL**
If the PAUSE button is depressed in the playback mode, the tape movement stops and a still picture can be observed.

3. **BETASCAN**
The Betascan circuit arranged on the DS-3 board charges the drum speed in the Betascan mode so that the horizontal sync signal of the playback video signal becomes approx. 15.75 kHz.

4. **SIGNAL PROCESSING CIRCUIT**
The signal processing circuit is arranged on the CR-6 board. The rotating video heads trace several video tracks recorded on the tape, while the heads cross the tracks, in the various playbacks other than the ordinary one. In the 2H mode, the H's of the record patterns are not arranged uniformly and a 0.5H deviation is produced whenever the rotary video heads trace the video track. This signal processing ciruit corrects the 0.5H deviation.
The circuit FM-modulates the video signal with the 10.24MHz carrier wave, delays the modulated signal by 0.5H, and demodulates the signal. Thus the 0.5H delayed video signal is produced. The jumping signal (to show the noise position) switches the 0.5H delayed and the non-delayed video signals in order to produce the video signal without the H deviation. These circuit operations are not performed in the 3H mode because of the uniform H arrangement in this mode.
The signal processing circuit inserts the false vertical sync signal produced from the RF switch pulse so that the vertical sync of the playback picture on the TV is not disturbed when a noise appears around the vertical sync signal.

Audio circuitry

The audio circuitry located on the SA-3 board is monaural and includes the microphone amplifier, the playback equalizer amplifier, the line amplifier, the record equalizer amplifier, the AGC and the bias oscillator circuits. Also on the SA-3 board is circuitry that permits the audio dubbing.

Tuner-I.F. block

The tuner-I.F. block includes the tuner (BT-852), the preset channel select section, the tuner AGC, the I.F.-7 board, the antenna select switch, the RF modulator and the antenna terminal board.

1. **Tuner**
The tuner is a UHF/VHF monolithic construction ET varactor tuner, selecting channels electronically.

2. **Preset channel select section**
The preset channel select section is located on the TS-4 board and arranged with the band select switch for V-LOW (2ch to 6ch), V-HIGH (7ch to 13ch) and UHF, and the preset volume. The channel select switch switches the pre-set tuning voltages to the 14 position pushbutton TV channel section, with any mixture of VHF and UHF channel is possible tuner and currents to light the channel lamps.

3. **IF section**
The IF section is located on the IF-7 board and includes the VIF, SIF and AFC circuits.

4. **Tuner AGC circuit**
The tuner AGC circuit is located on both the TU-5 and the the IF-7 boards. The IF signal level is detected in the VIF circuit and converted to a voltage for the I.F. and tuner gain control.

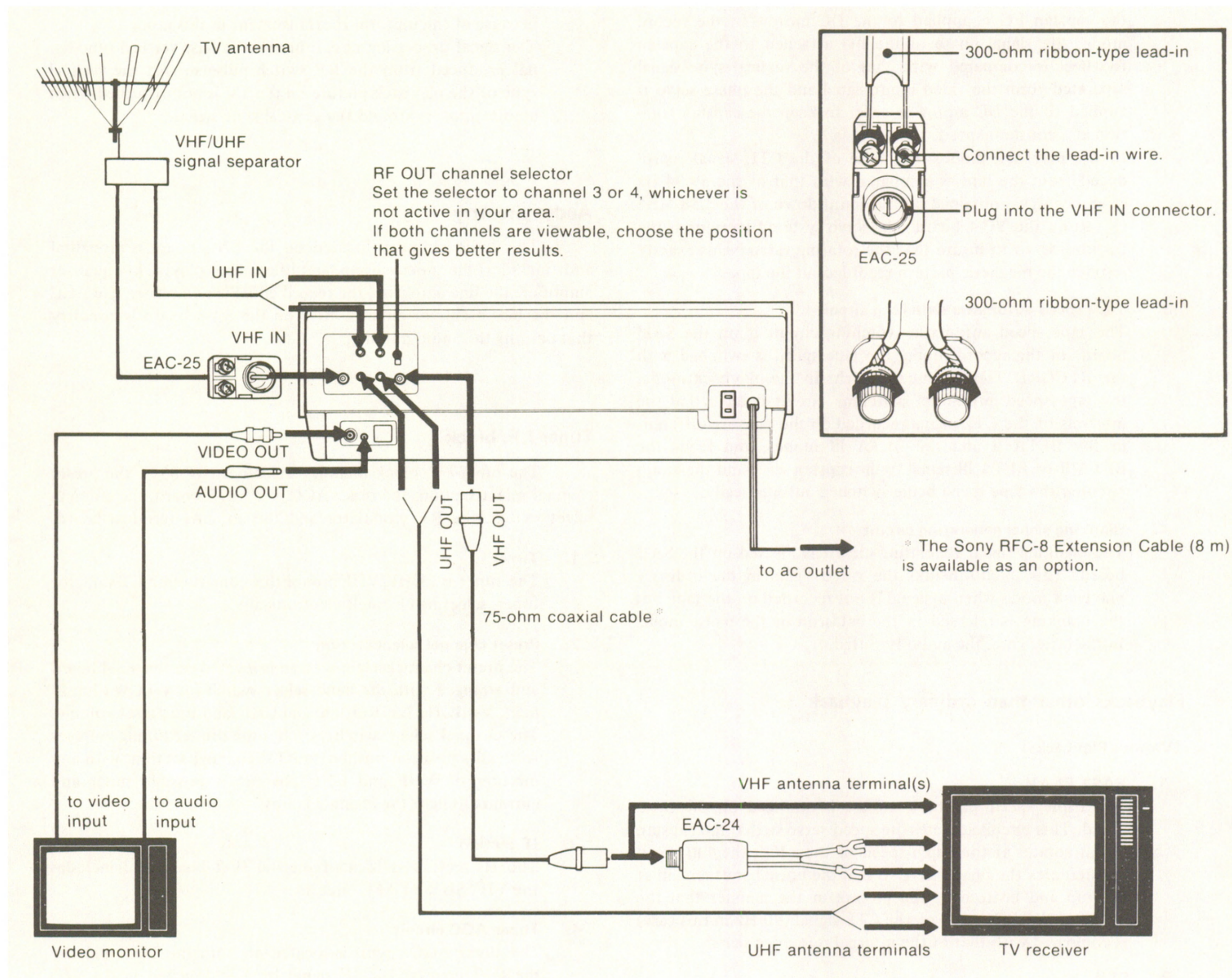
5. **DC converter circuit**
The DC converter produces 33V (for developing the tuning voltage), +12V (B+) for the tuner, −12V (the VHF band switching voltage), and +110V (the indicator voltage).

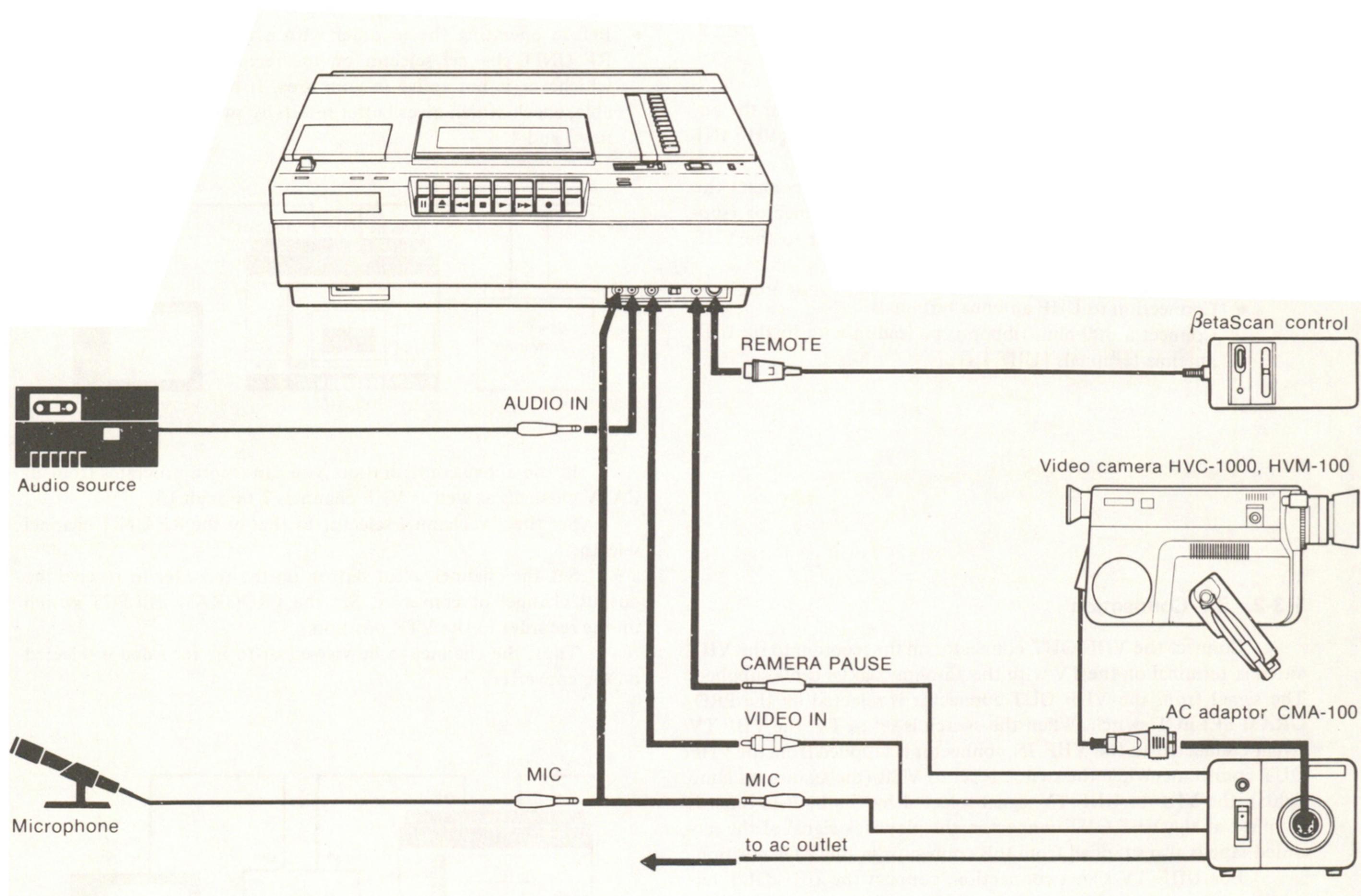
Timer circuitry

The timer circuitry is located on the DT-4, the DT-5, the DT-6 and the DT-7 boards. This timer memorizes a single time segment for up to three days in advance as one program to be recorded in the designated future time, and recorded daily until shut off or tape runs out.

1-3. CONNECTIONS

CONNECTION DIAGRAMS





Notes:

- Cameras must conform to American TV (EIA) standards.
- The MIC jack has priority over the AUDIO IN jack. Any input to the AUDIO IN jack is automatically disconnected whenever a microphone is inserted into the MIC jack.
- In camera recording, set the CAMERA TUNER Selector to CAMERA, and connect a microphone to the MIC jack, or connect a tape recorder or a record player to the AUDIO IN jack.
- Before making a TV recording, check that the CAMERA TUNER Selector is set to TUNER and the cable from the MIC jack is disconnected.

1-3-1. Antenna Connection

VHF and UHF antennas with separate lead-in wires, or a combination VHF-UHF antenna with a single lead-in wire may be used. When a combination VHF-UHF antenna is in use, the signals, separated by a VHF-UHF signal separator, are fed to the VHF and UHF IN terminals of the video recorder respectively.

- Connection to VHF antenna terminal
  When using a 75-ohm coaxial cable lead-in from the antenna, connect it to the VHF antenna connector [VHF IN] with an F-type connector (optional).
  When using a 300-ohm ribbon-type lead-in, connect the leads to the EAC-25 External Antenna Connector (supplied), then connect the Antenna Connector to the VHF IN connector.
- Connection to UHF antenna terminals
  Connect a 300-ohm ribbon-type lead-in wire to the UHF antenna terminals [UHF IN].

1-3-2. TV Connection

Connect the VHF OUT connector on the recorder to the VHF antenna terminal on the TV with the 75-ohm coaxial cable supplied. The signal from the VHF OUT connector is selected by the PROGRAM SELECT switch. When the switch is set to TV, the VHF TV signal connected to the VHF IN connector is supplied from the VHF OUT connector. When the switch is set to VTR (the associated lamp lights), the VHF or UHF TV signal selected by the built-in tuner is supplied at the VHF OUT connector; the playback signal of the recorded tape is also supplied from this connector in the VTR position.

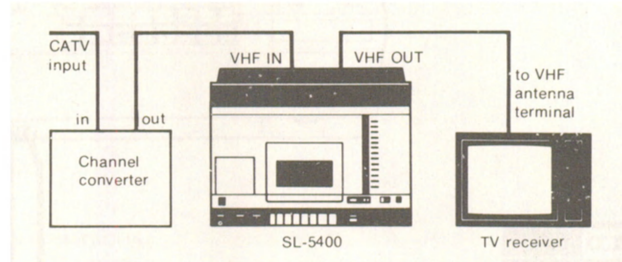
For UHF TV signal connection, connect the UHF OUT terminals of the recorder to the UHF antenna terminals of the TV with the 300-ohm ribbon-type lead-in supplied. The UHF TV signal connected to the UHF IN terminals are supplied from these terminals. The PROGRAM SELECT switch has no effect upon UHF viewing.

Caution

Connection between the SL-5400 VHF OUT connector and the antenna terminals of a TV receiver should be made only as shown in these instructions. Failure to do so may result in operation that violates the regulations of the Federal Communications Commission regarding the use and operation of rf devices. Never connect the output of the SL-5400 to an antenna or make simultaneous (parallel) antenna and SL-5400 connections at the antenna terminals of your receiver.

1-3-3. Connections to a Cable TV (CATV) System

- It is recommended that you consult with your cable television company for proper connection of your Betamax unit to your cable TV system.
- Before operating the recorder with a cable-TV system, set the RF UNIT channel selector on the recorder to channel 3 or 4, whichever is not active in your area. If both channels are viewable, check which gives better results by switching between channes 3 and 4.

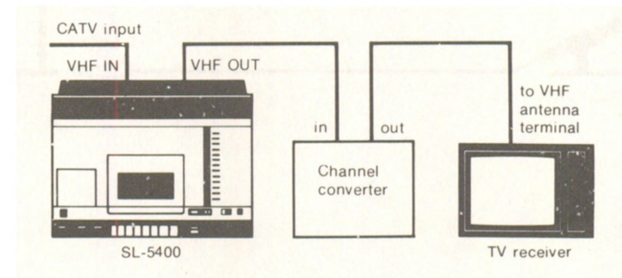


In the above configuration, you can record programs from all CATV channels as well as VHF channels 2 through 13.

Set the TV channel selector to that of the RF UNIT channel selector.

Set the channel select button on the recorder to receive the output channel of converter. Set the PROGRAM SELECT switch on the recorder to the VTR position.

Thus, the channel to be viewed or to be recorded is selected on the converter.



In this configuration, you can veiw one program from the converter while recording a program on VHF channels 2 through 13 via the recorder. Set the TV channel selector to the output channel of the converter and the PROGRAM SELECT switch to TV.

For playback, set the channel selector on the converter to that of the RF UNIT channel selector.

When a channel converter is not in use, connect the CATV input to the recorder, then connect the recorder and the TV receiver as show in connection diagram.

1-4. OPERATION

1-4-1. Pause

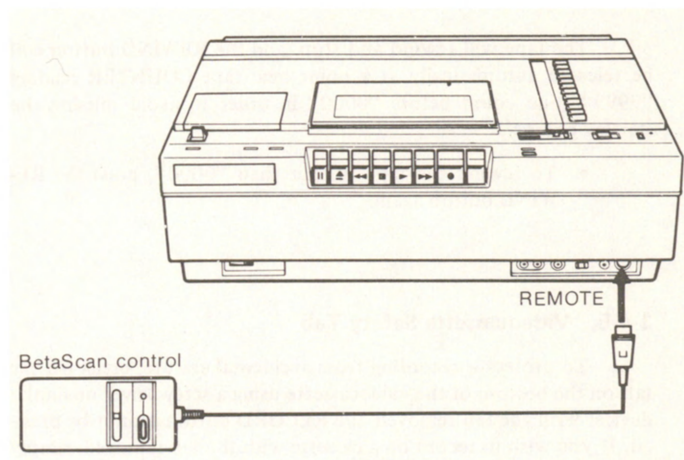
To stop the tape momentarily during record, playback or audio dub mode, press the PAUSE button. The PAUSE/FREEZE lamp will light. The pause function is electrically controlled, thus the PAUSE button is not locked in the depressed position. To restart the tape, push the PAUSE button again.

When the PAUSE button is pressed during recording, the E-to-E (electronics-to-electronics) mode picture—the picture selected by the recorder for recording, will be observed on the TV screen, but not recorded.

When the PAUSE button is pressed during playback, a freeze frame picture will appear on the TV screen. A "snowy" band may appear in the freeze frame picture.

The pause mode may be remotely controlled with the Betascan control unit.

- After more than about 5 minutes in the pause mode of operation, the pause mode will be automatically released, and the previous mode (record or playback) will be restored.
- Recordings made with the use of the PAUSE button may exhibit momentary instability in playback at the point the pause mode was initiated.



1-4-2. Rewind, Fast Forward and Betascan Operation

Press the REWIND or FF button for rewind or fast forward operation. During rewind or fast forward mode, the E-to-E mode picture will appear on the TV screen.

When the tape has reached the end of the rewind or fast forward operation, it will stop automatically and the respective function button will be released. The tape may be stopped at any point during rewind or fast forward by pressing the STOP button.

When the REWIND or FF button is pressed during playback, the recorder starts Betascan operation, and a forward or reverse picture with high-speed motion will be observed on the TV screen. During Betascan operation, streaks may appear in the playback picture. The Betascan operation may be remotely controlled with the Betascan control unit.

Remote Control

The pause and Betascan features may be remotely controlled with the Betascan control unit.

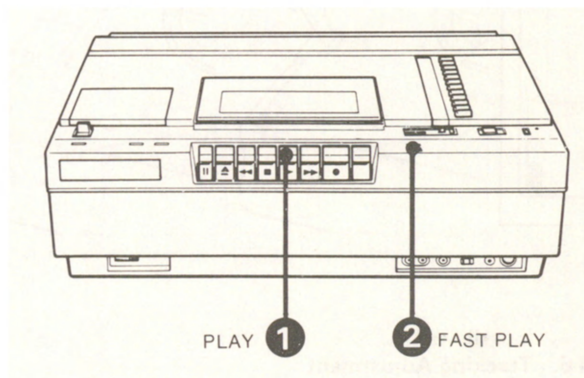
Align and insert the plug into the REMOTE connector on the recorder.

The PAUSE button on the control functions the same as that on the recorder. During the pause mode of operation, the associated lamp will light. The Betascan button will function when the recorder is in the playback mode. Press the REVIEW side, and a high-speed reverse picture will be observed. Press the CUE side and a high-speed forward picture will be observed.

1-4-3. Fast Play

When the FAST PLAY button is pressed during playback, playback speed will be three times normal speed. The associated lamp will light. To restore the normal playback speed, press the FAST PLAY button again. The noise band may appear on the fast-play picture.

In such a case, turn the TRACKING control until the best picture is obtained.



1-4-4. Tape Counter and Memory Switch

Reset the tape COUNTER before starting a recording for later reference in playback.

The MEMORY switch is used for precise program relocation of a recorded tape.

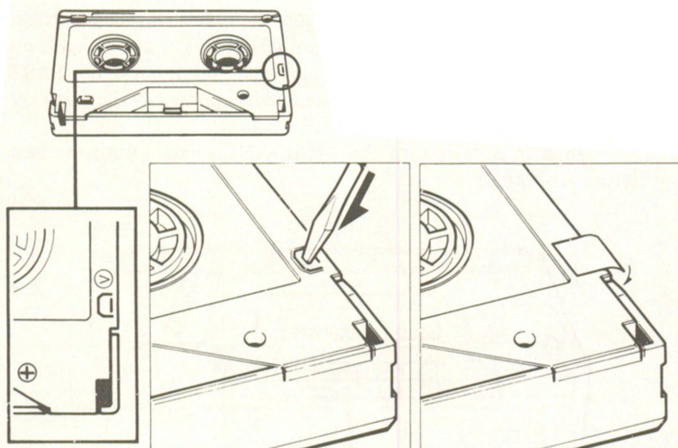
1. Locate any desired starting point and reset the tape COUNTER to register this point ("0000" shown on the COUNTER).
2. Set the MEMORY switch to ON.
3. Play or record a tape.
4. Press the STOP button.
5. Press the REWIND button.

The tape will rewind and stop, and the REWIND button will be released automatically at a point near tape COUNTER reading "9999" (one count before "0000" in order to avoid missing the starting point.)

- To rewind the tape further than "0000", press the REWIND button again.

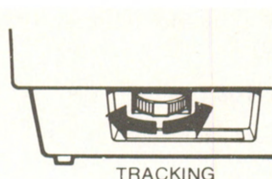
1-4-5. Videocassette Safety Tab

To protect a recording from accidental erasure, break off the tab on the bottom of the videocassette using a screwdriver or similar device. With the tab removed, the RECORD button cannot be pressed. If you wish to record on a cassette with the tab removed, simply cover the hole with a piece of cellophane or vinyl tape.



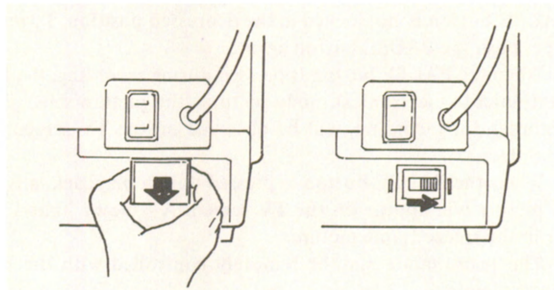
1-4-6. Tracking Adjustment

In the unlikely event that streaks or snow appear in the playback of tapes made on other recorders or in the fast-play picture, turn the TRACKING control in either direction until the best picture is obtained. Allow a second or two for new settings to take effect. When playback of this particular tape is finished, return the TRACKING control to its center detent position.



1-4-7. Playback of Tapes Recorded in BETA I Format

Playback of the tapes recorded in the BETA I format is possible with this recorder. To playback this type of tape, set the tape speed switch on the rear panel to the β I position. To expose the switch, remove the plastic cover.

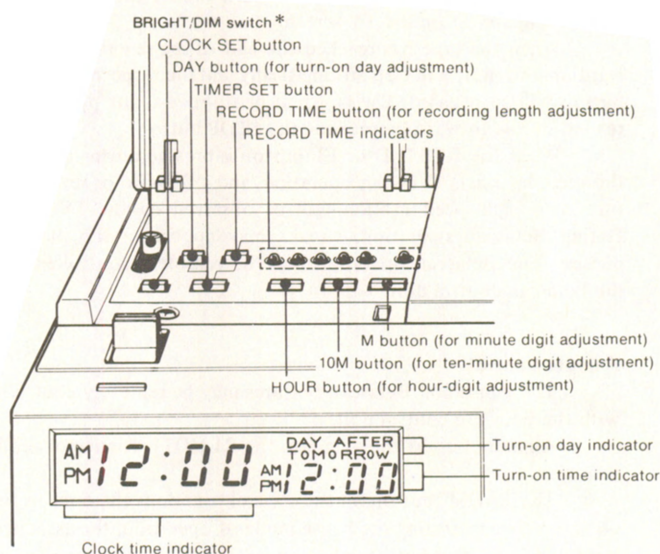


During playback of a tape recorded in the BETA I format, the Betascan operation and fast play does not function and a freeze frame picture cannot be obtained in the pause mode.

- Reset the switch to its original position (β II/β III) when playback of this particular tape is finished.

1-4-8. Timer Operation

The built-in timer functions as a normal clock showing the time in the indicator window. Using the timer as described, a recording may be made while the system is unattended.



* BRIGHT/DIM switch

Select the brightness of the time indicator, BRIGHT or DIM. The switch may be set to BRIGHT during daylight hours and to DIM at night.

1-4-9. Clock Time Adjustment

When the ac power cord is connected to a working outlet, the clock time starts operating, indicating 12:00 and dots begins to flash. The clock time must then be set to the correct time of day.

① Open the timer control compartment to expose the controls.

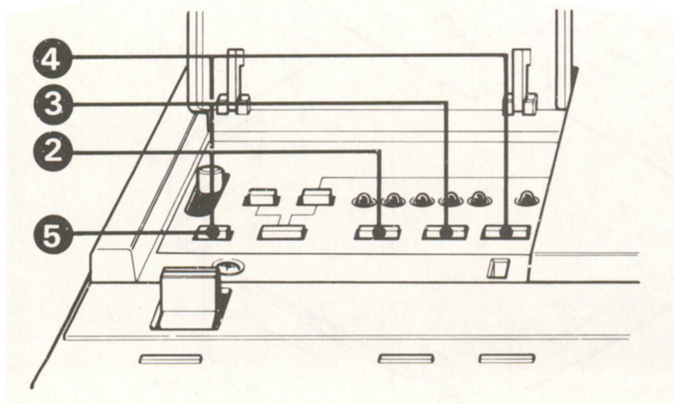
② While depressing the CLOCK SET button, press the HOUR button for hour-digit setting. First keep the button depressed to advance the digits, then push it stroke by stroke as the desired hour indication approaches. You may have to go through a complete 12 hour period to set the correct AM or PM period. The CLOCK SET button should be depressed continuously during the following two steps (③ and ④).

③ Press the 10M button for ten-minute-digit setting in the same manner as described in step ②.

④ Press the M button for minute-digit setting in the same manner as described in step ②.

⑤ Release the CLOCK SET button simultaneously with a standard time signal (broadcast, telecast or telephone) at the exact time. The clock will then begin to operate, showing the precise time of day.

- "PM 12:00" indicates noon; "AM 12:00" indicates midnight.
- When the CLOCK SET button is released, the upper dot will begin to blink; after 30 seconds, the lower dot will blink. The upper dot blinks during the first half of each minute, and the lower dot blinks during the second half.
- Whenever the CLOCK SET button is depressed, the clock is reset to 0 seconds displayed time; when released, the clock begins to operate. Avoid unnecessary use of the button which may result in clock time delay.
- If power is interrupted or the ac power cord is disconnected, the time idicator will display 12:00 and the dots will alternately flash quickly when power is reapplied. In this case, reset the clock time.



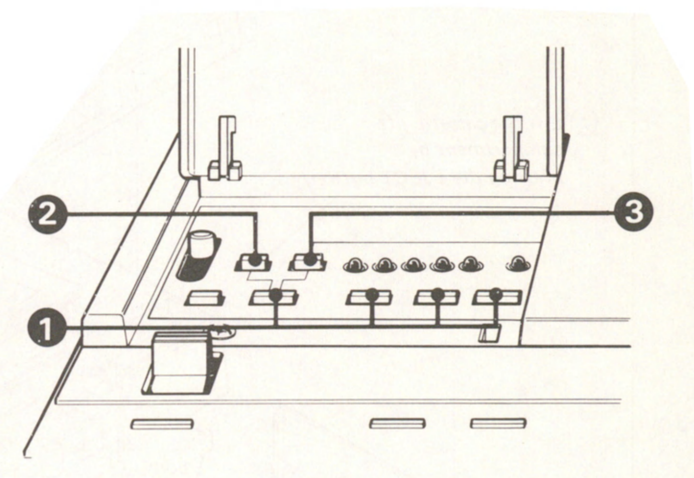
1-4-10. Timer Adjustment

For timer recording, set the turn-on time, day and recording length as follows.

① Set the turn-on time. While depressing the TIMER SET button, depress the HOUR, 10M and M buttons until the turn-on time indicator shows the desired time in the same manner as the "CLOCK TIME ADJUSTMENT".

② Set the turn-on day by depressing the DAY button. When the turn-on day indicator shows nothing, the recording will start today; when it shows TOMORROW, the recording will start tomorrow; when it shows DAY AFTER TOMORROW, the recording will start on the day after tomorrow.

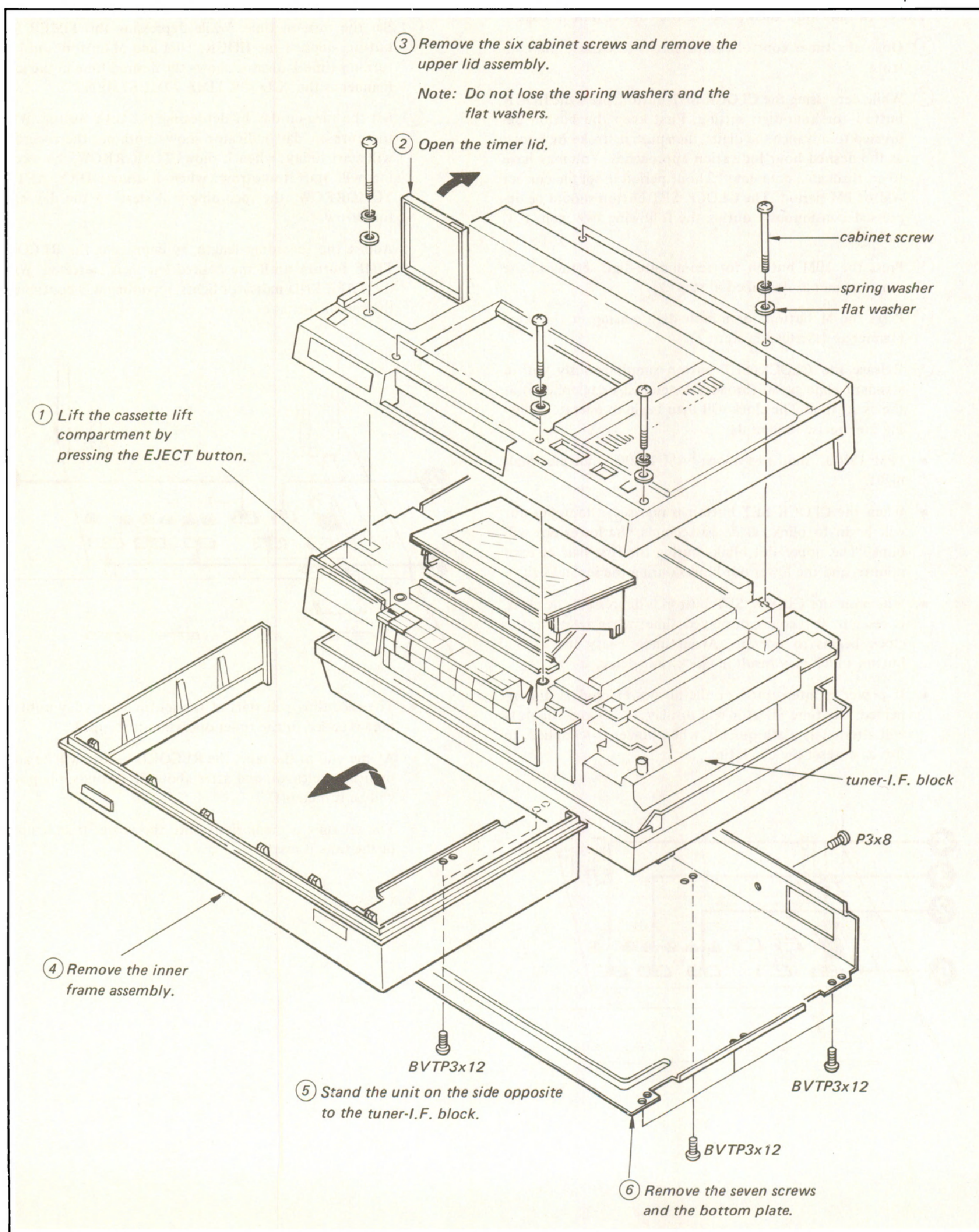
③ Adjust the recording length by depressing the RECORD TIME button until the desired length is indicated. When the TAPE END indicator lights, recording will continue to the end of the tape.



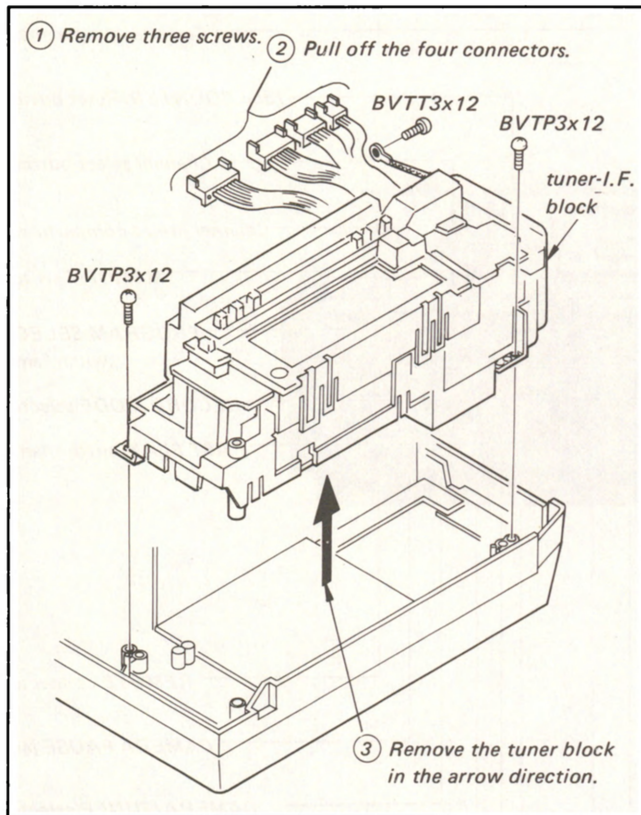
- The recording will start at the set time everyday until the tape is ended or the timer operation is stopped.
- At the end of the tape, the RECORD button will be automatically released, and after about 30 seconds, the power will be turned off.
- The set time is memorized until the power is interrupted or the time is reset.

1-5. DISASSEMBLY

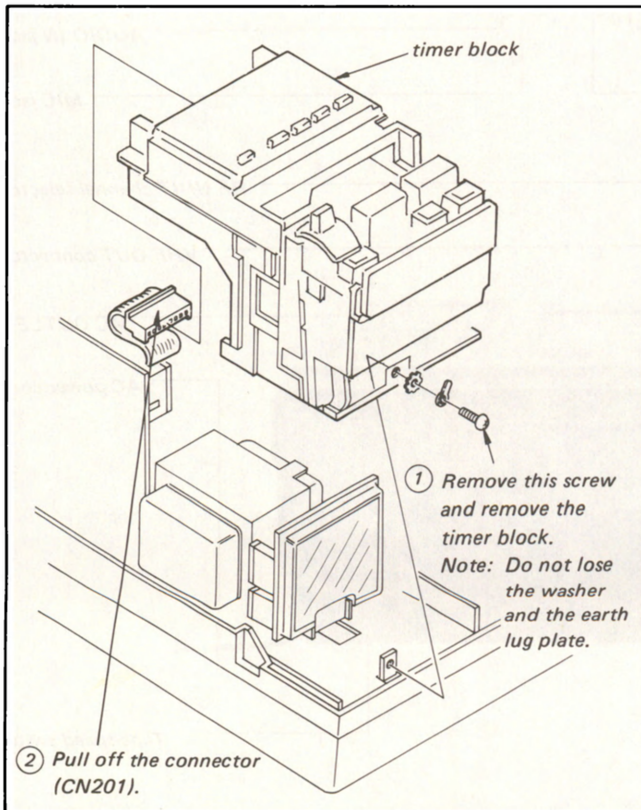
1-5-1. Cabinet Removal



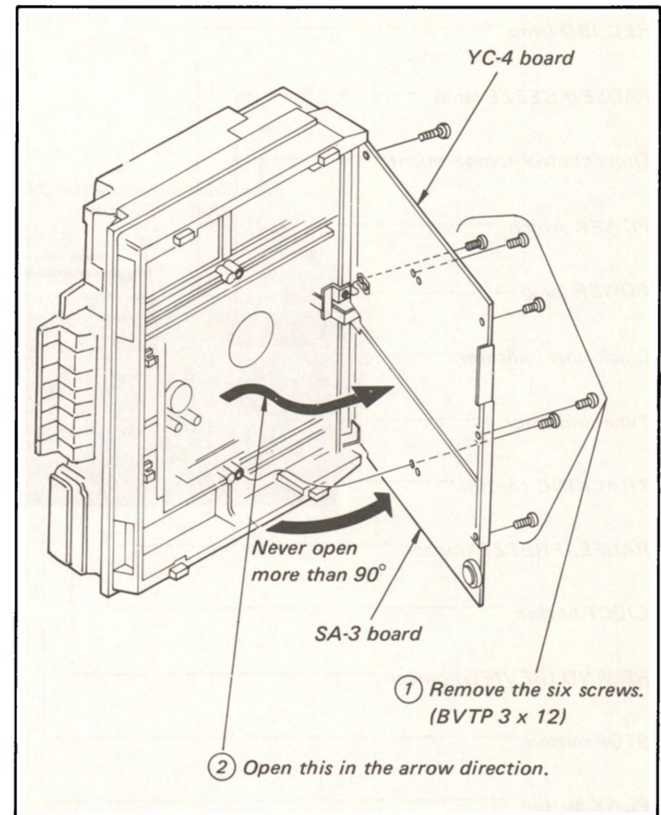
1-5-2. Tuner-I.F. Block Removal



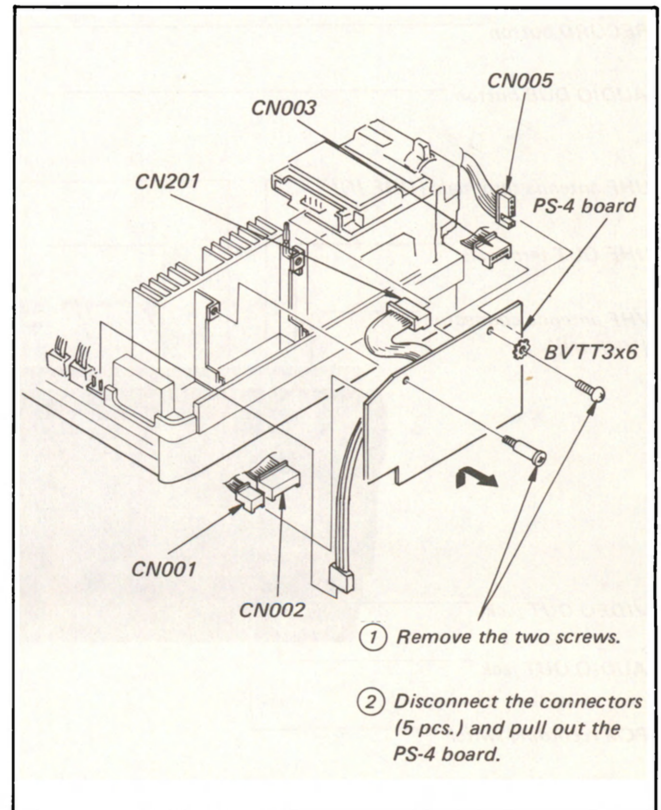
1-5-3. Timer Block Removal



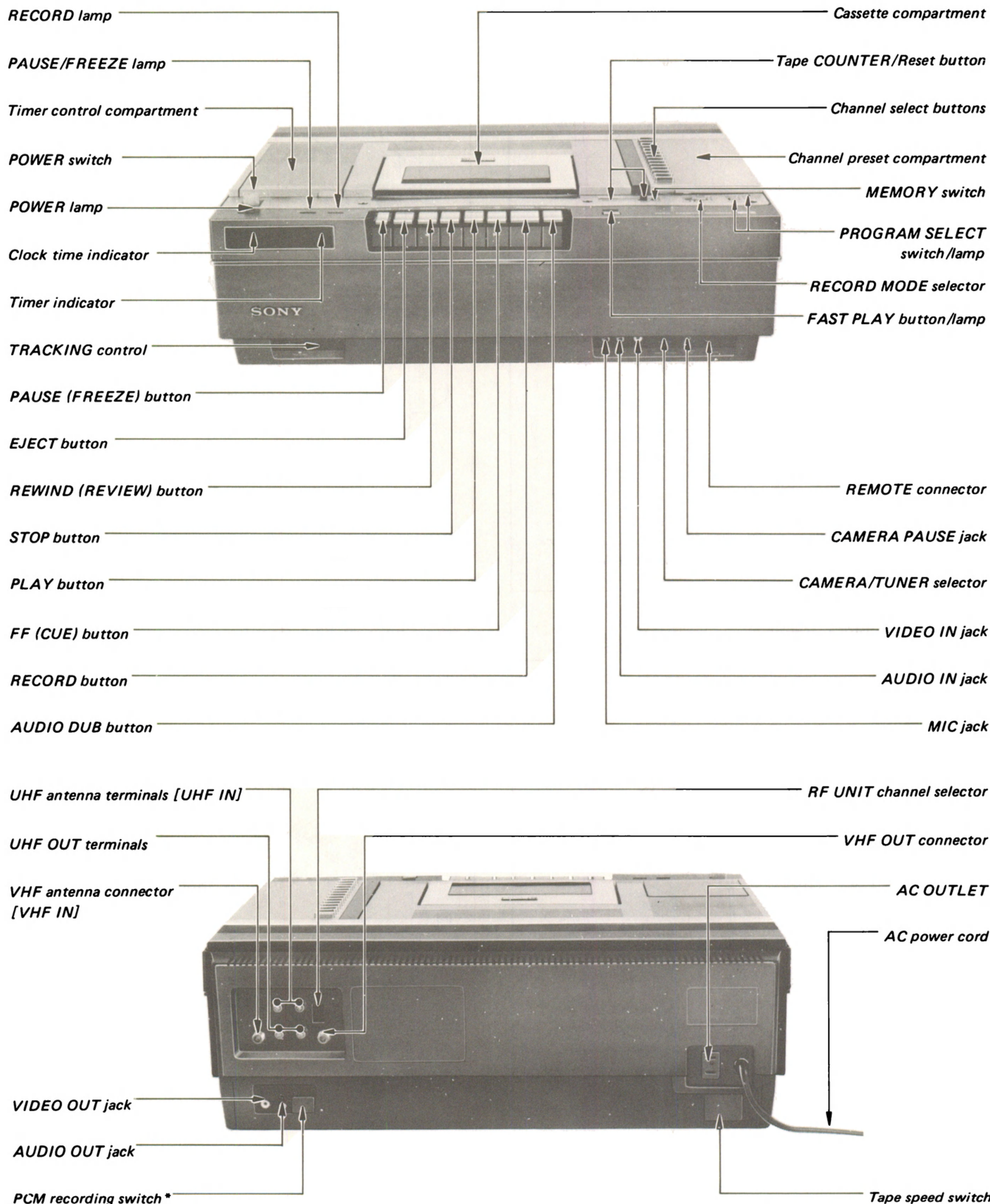
1-5-4. Check of YC-4 and SA-3 Boards



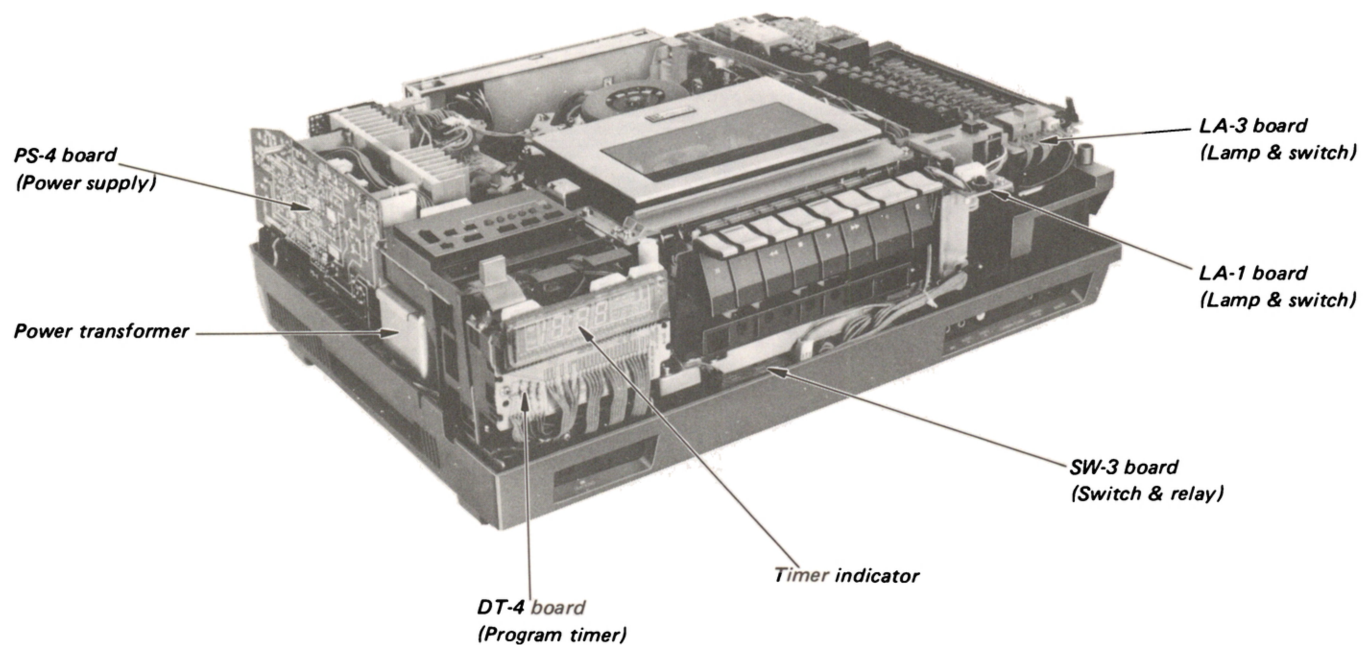
1-5-5. Check of PS-4 Board

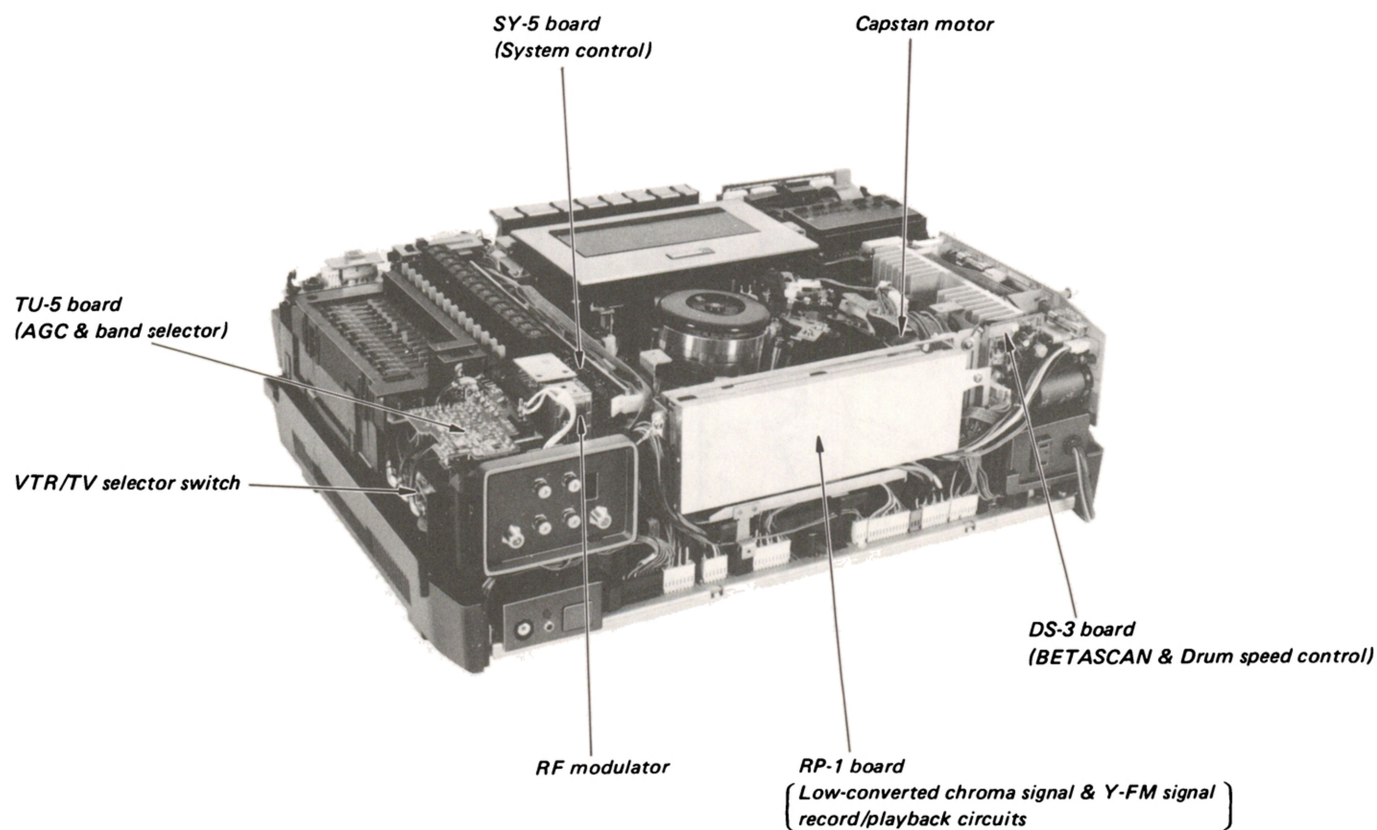


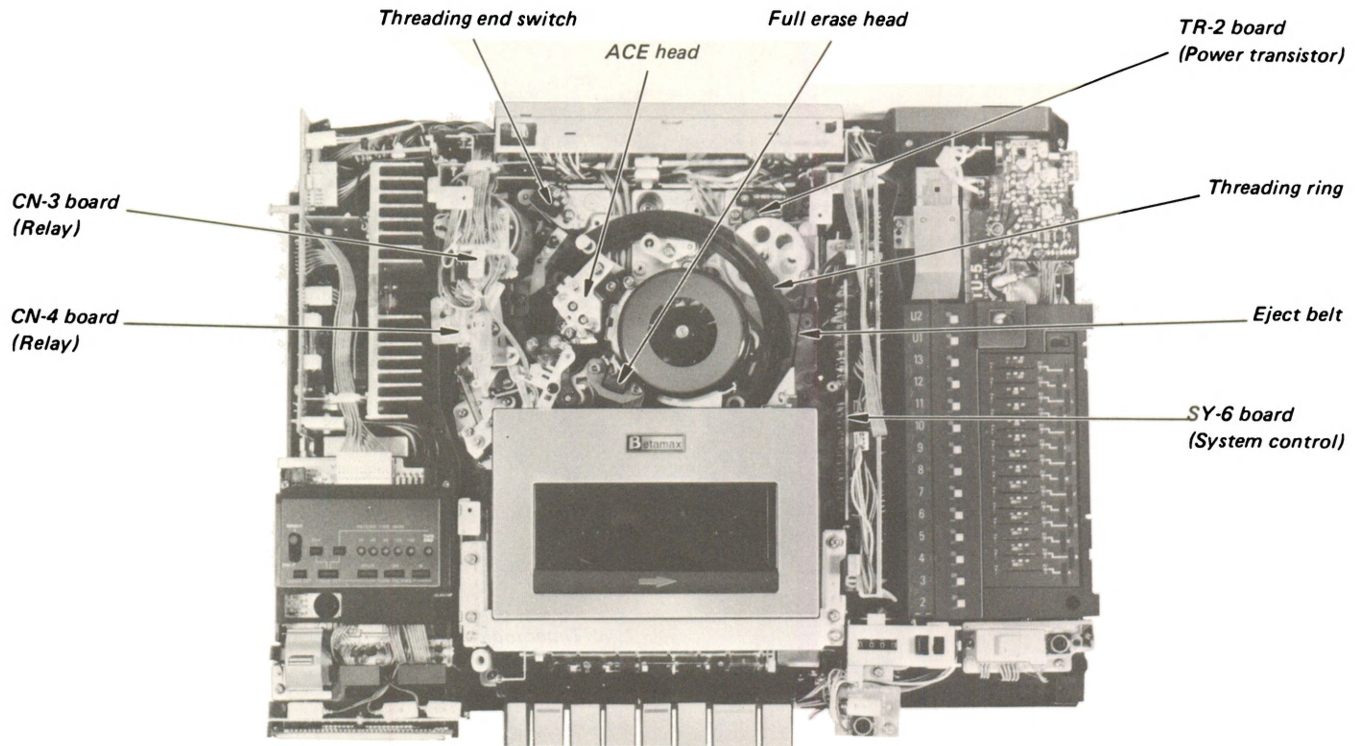
1-6. LOCATION OF PARTS AND CONTROLS

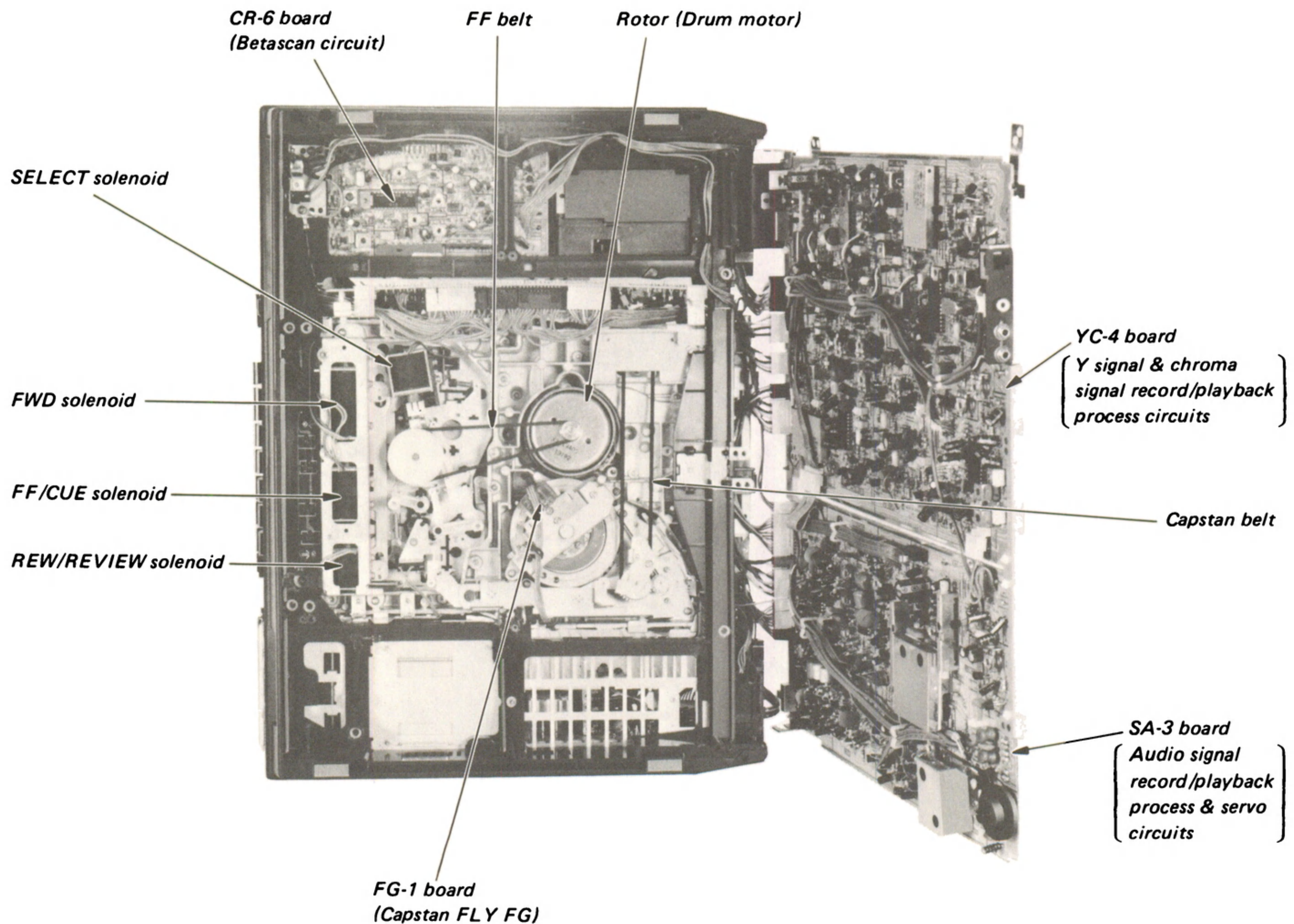


** During PCM recording when using the PCM adaptor, remove the rubber cover and set the switch to the left position.*

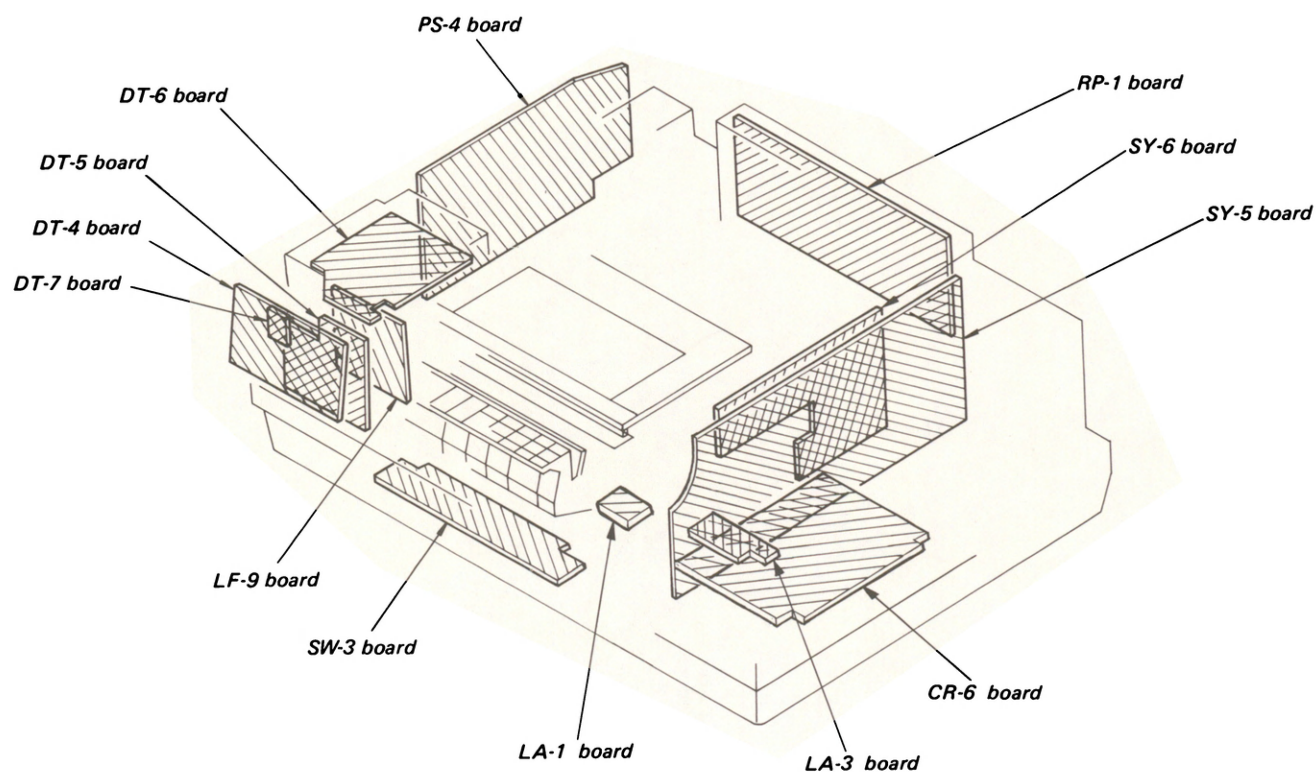

PS-4 board
(Power supply)
Power transformer
LA-3 board
(Lamp & switch)
LA-1 board
(Lamp & switch)
SW-3 board
(Switch & relay)
Timer indicator
DT-4 board
(Program timer)

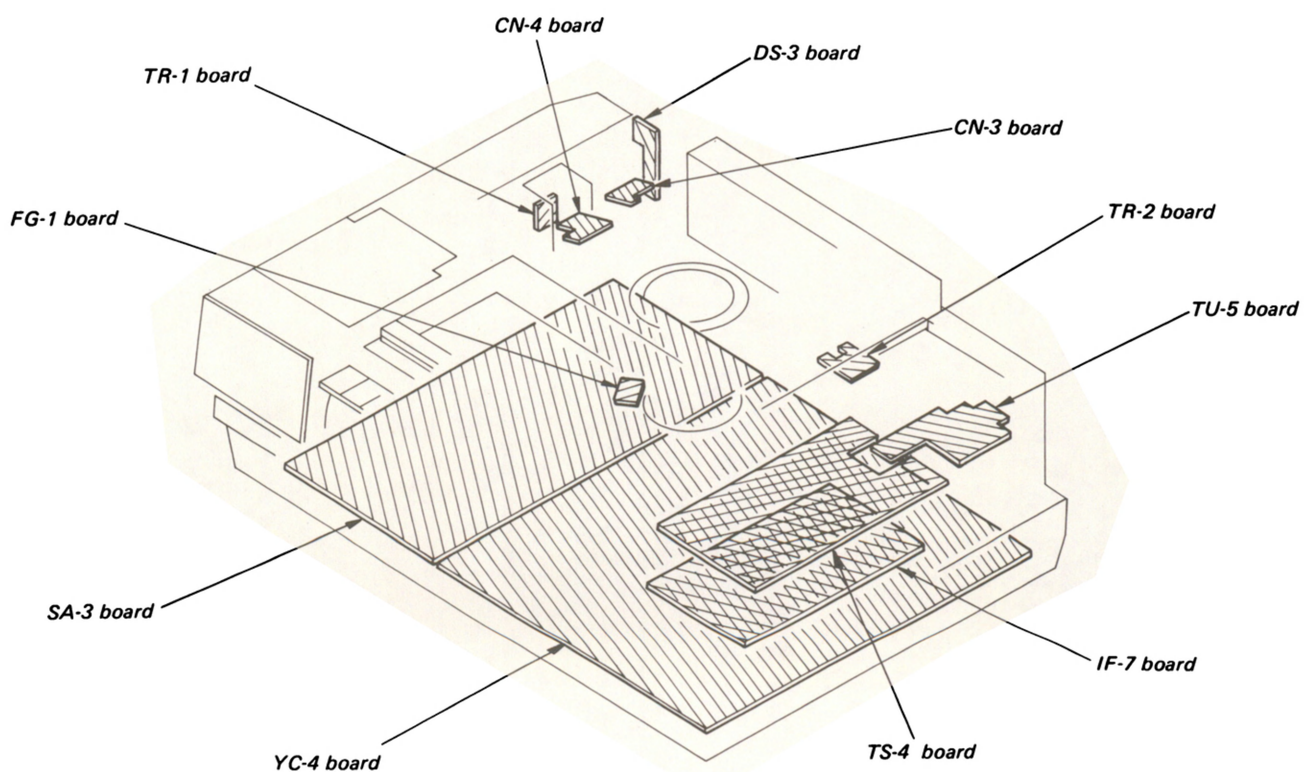

SY-5 board
(System control)
Capstan motor
TU-5 board
(AGC & band selector)
VTR/TV selector switch
DS-3 board
(BETASCAN & Drum speed control)
RF modulator
RP-1 board
(Low-converted chroma signal & Y-FM signal record/playback circuits)


Threading end switch
ACE head
Full erase head
TR-2 board
(Power transistor)
CN-3 board
(Relay)
Threading ring
CN-4 board
(Relay)
Eject belt
SY-6 board
(System control)
Betamax


CR-6 board
(Betascan circuit)
FF belt
Rotor (Drum motor)
SELECT solenoid
YC-4 board
Y signal & chroma
signal record/playback
process circuits
FWD solenoid
FF/CUE solenoid
Capstan belt
REW/REVIEW solenoid
SA-3 board
Audio signal
record/playback
process & servo
circuits
FG-1 board
(Capstan FLY FG)

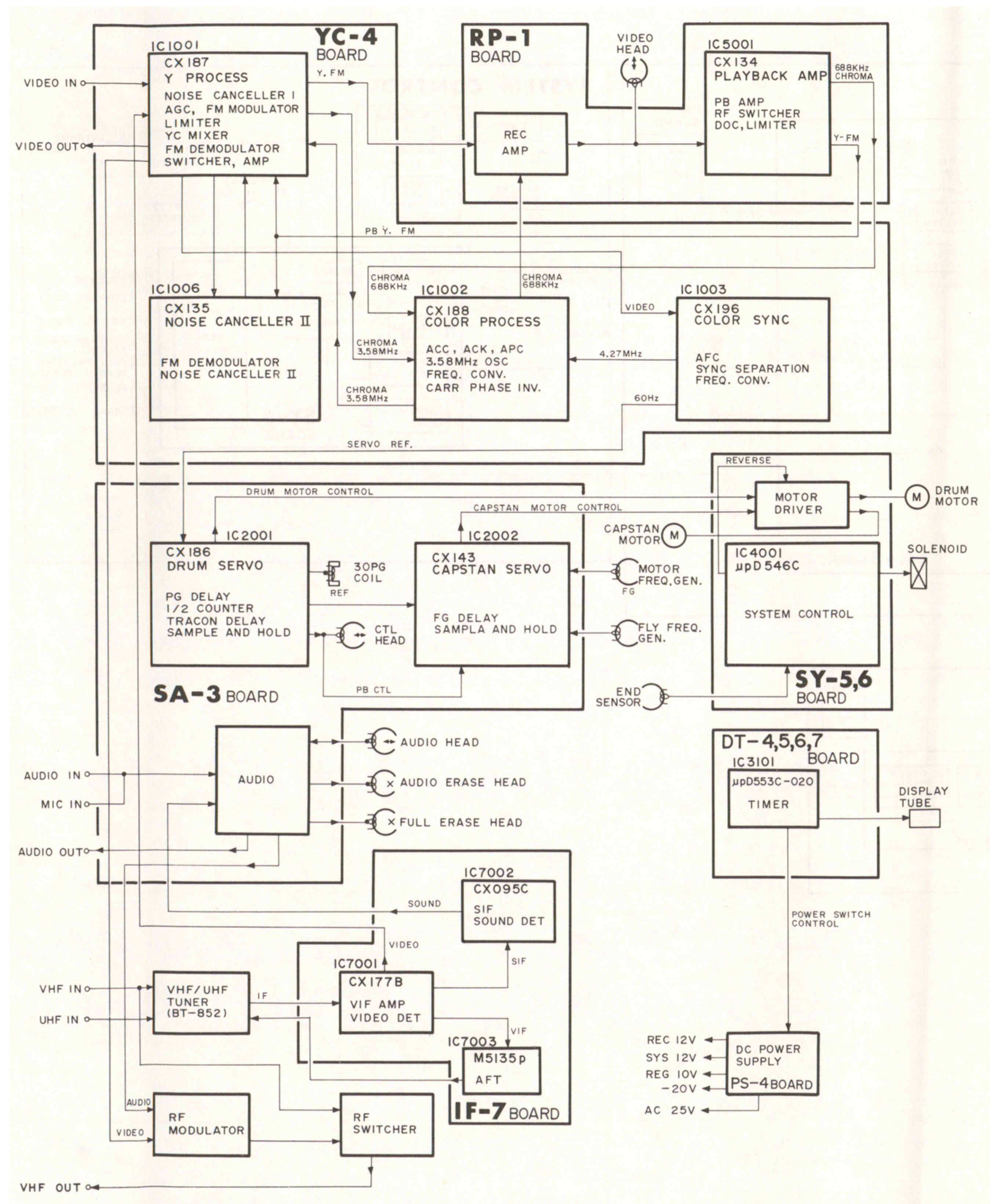
CIRCUIT BOARDS LOCATION



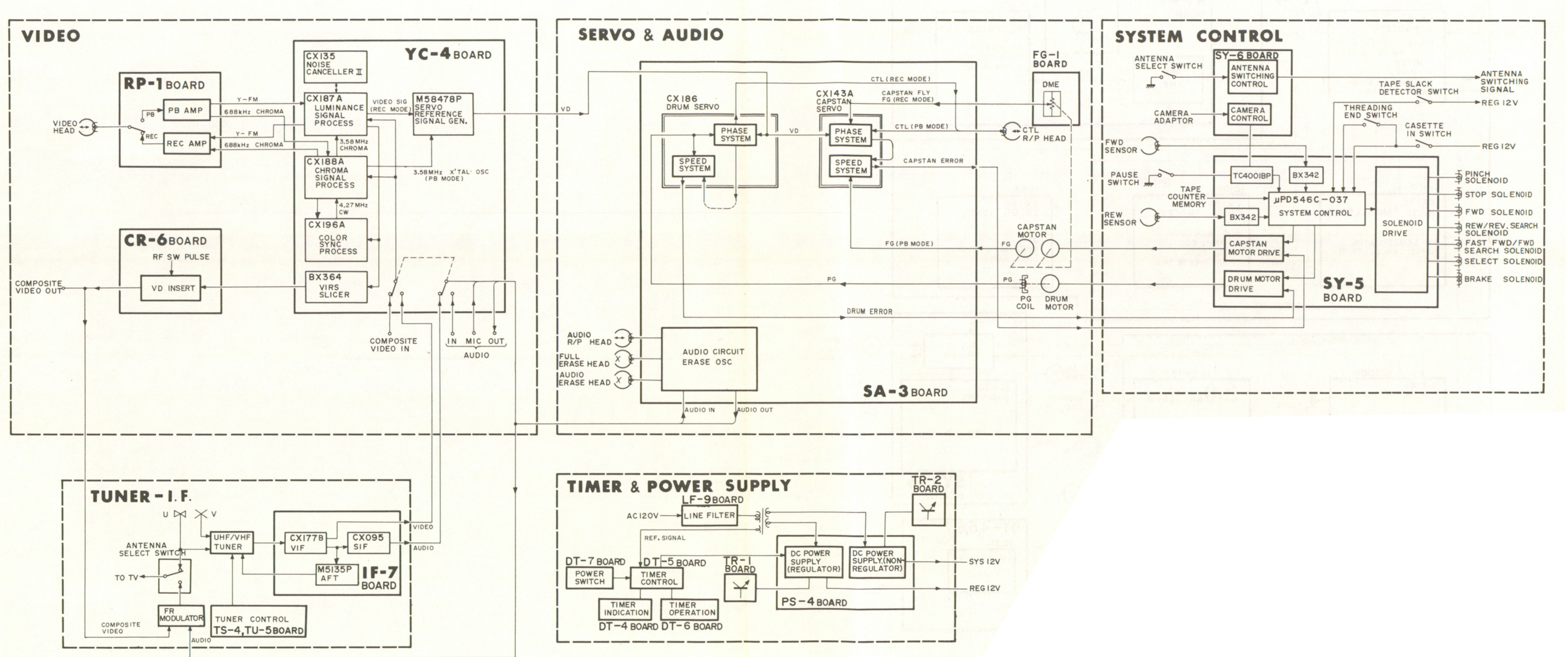


SECTION 2
BLOCK DIAGRAMS

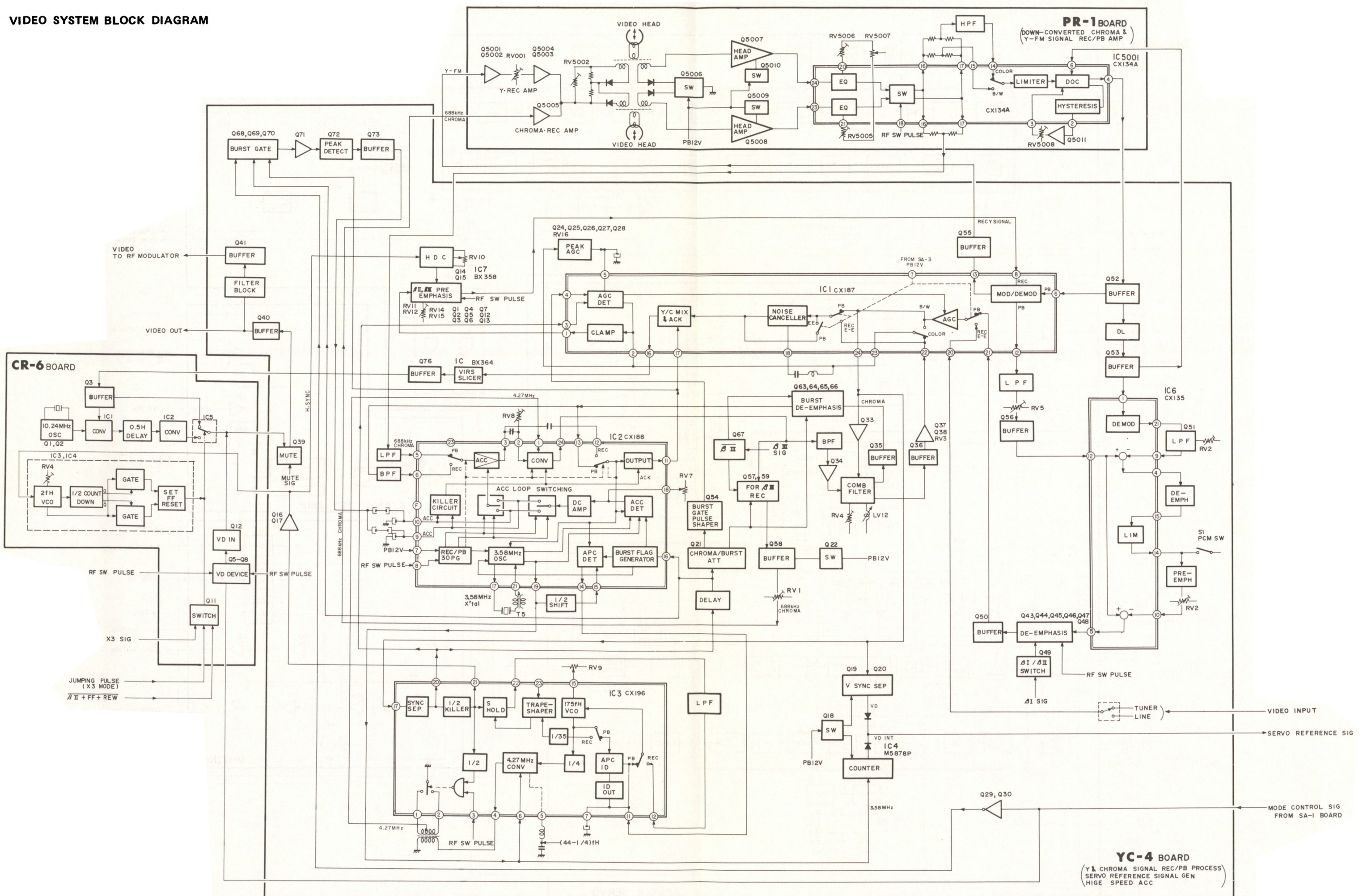
OVERALL BLOCK DIAGRAM (1)



OVERALL BLOCK DIAGRAM (2)



VIDEO SYSTEM BLOCK DIAGRAM

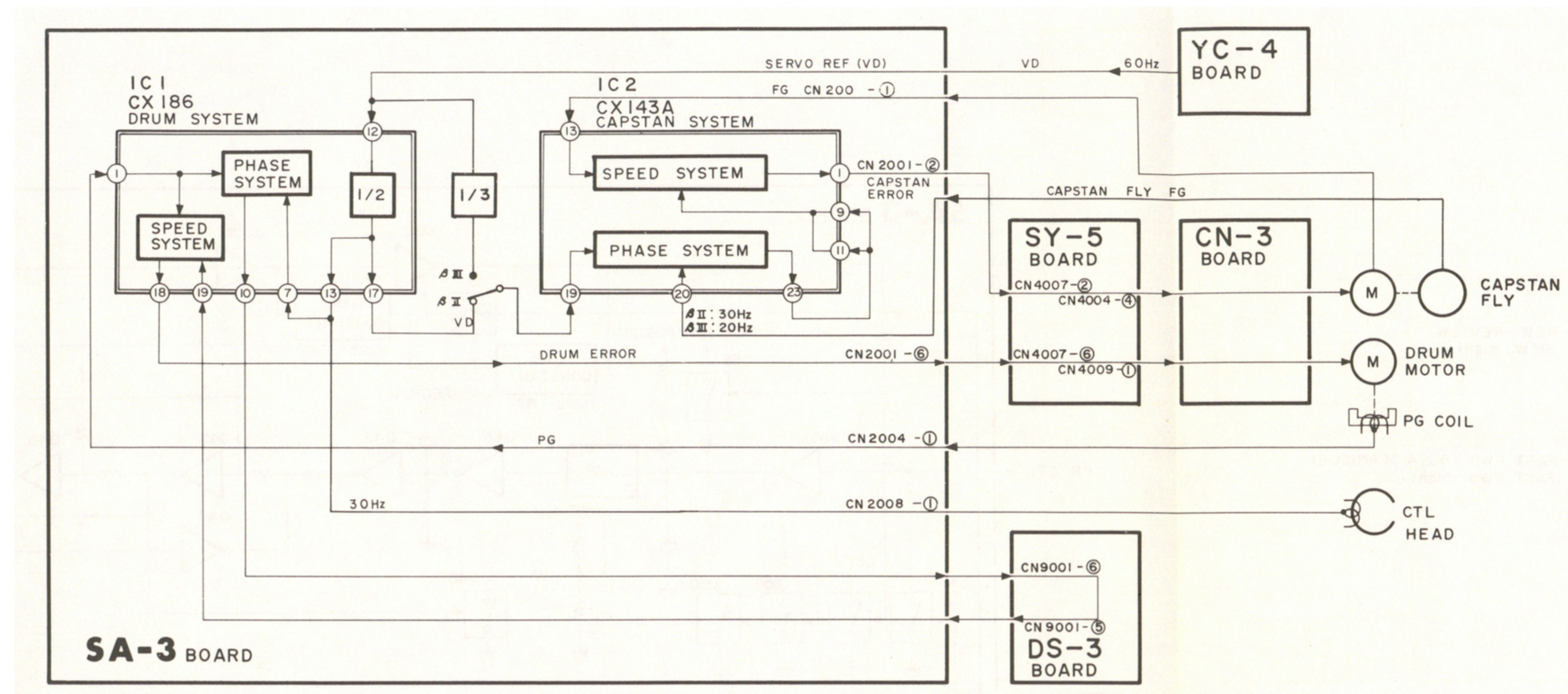


SERVO SYSTEM BLOCK DIAGRAM (1)

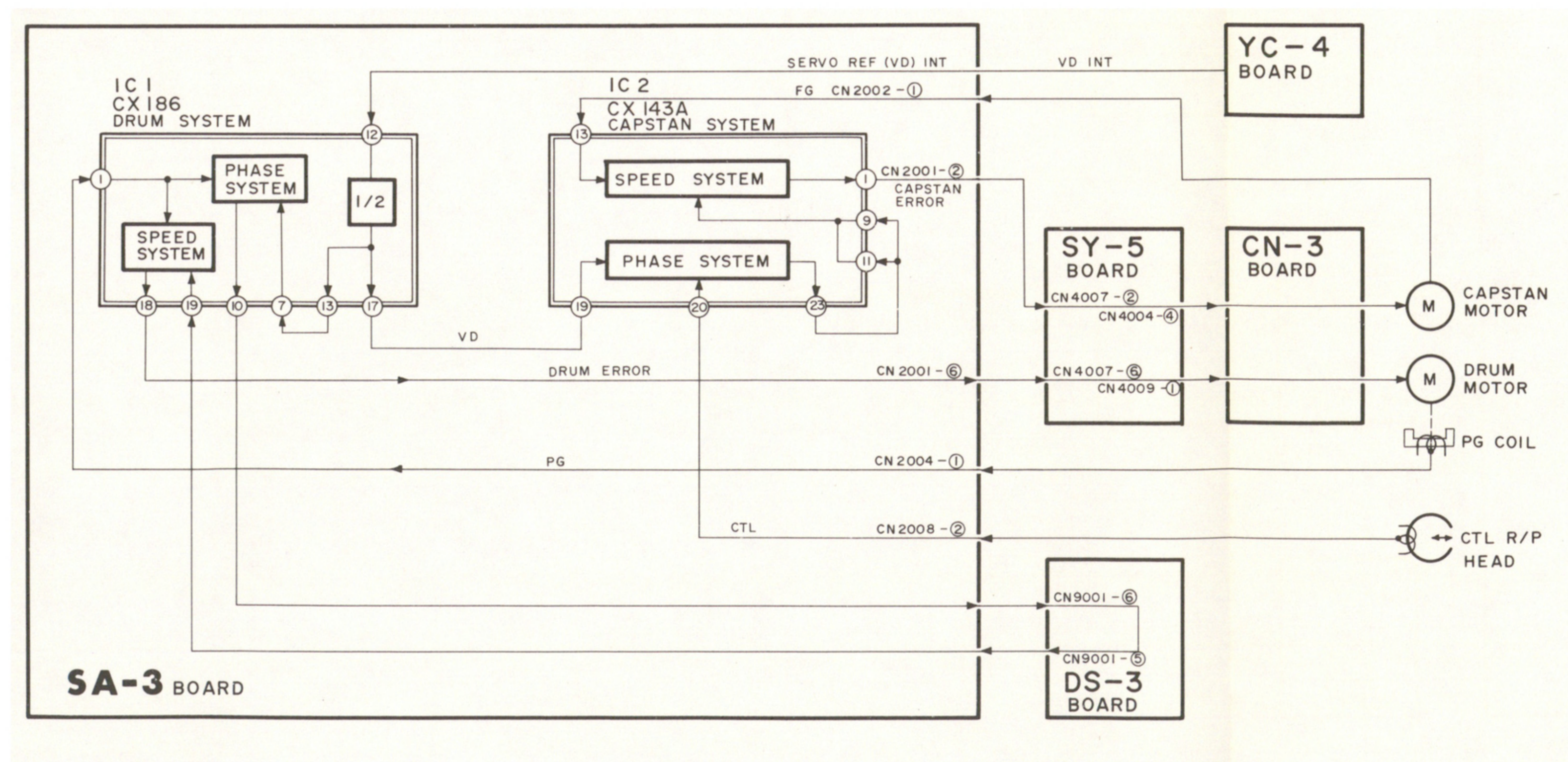


SERVO SYSTEM BLOCK DIAGRAM (2)

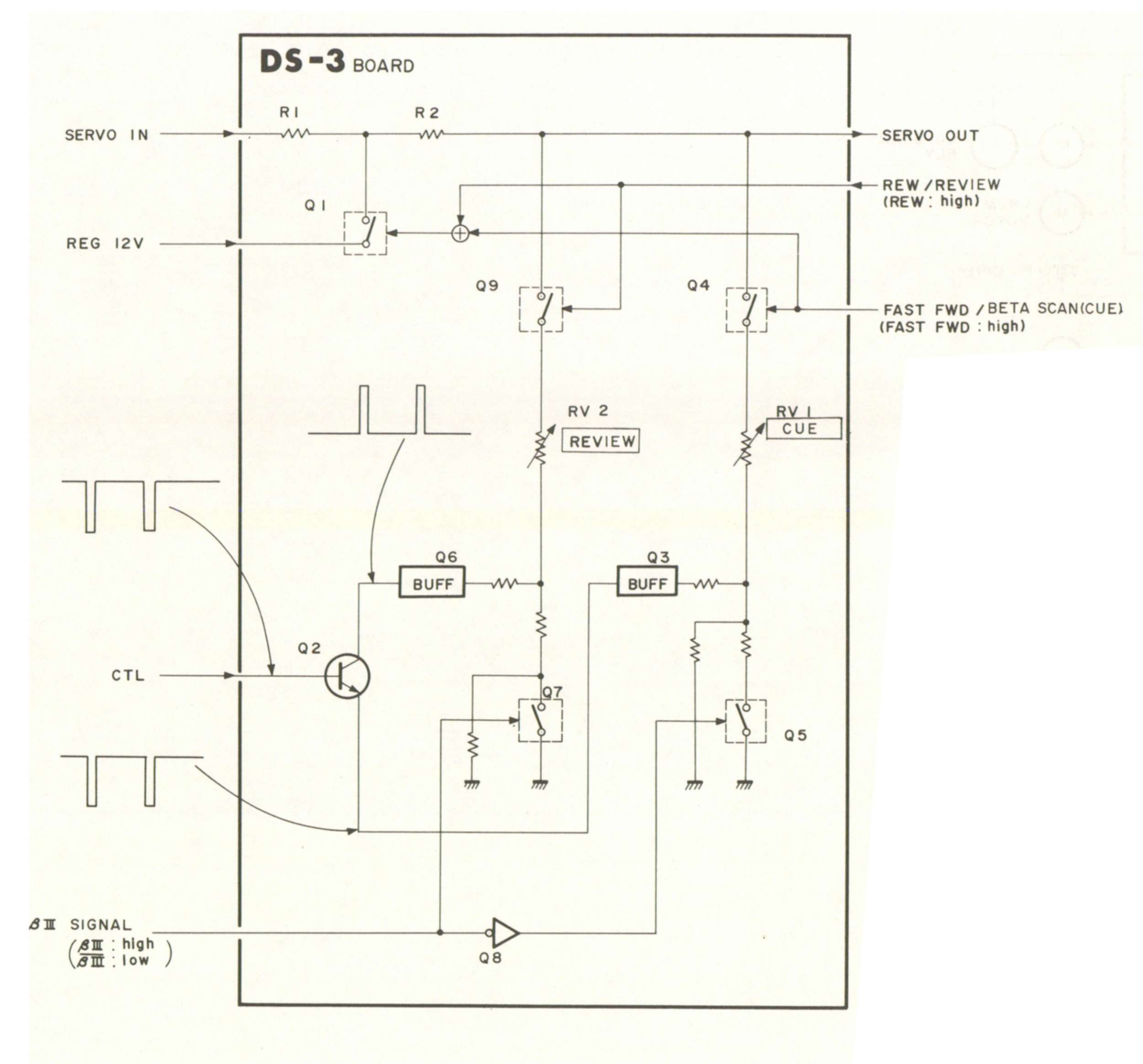
–REC MODE–



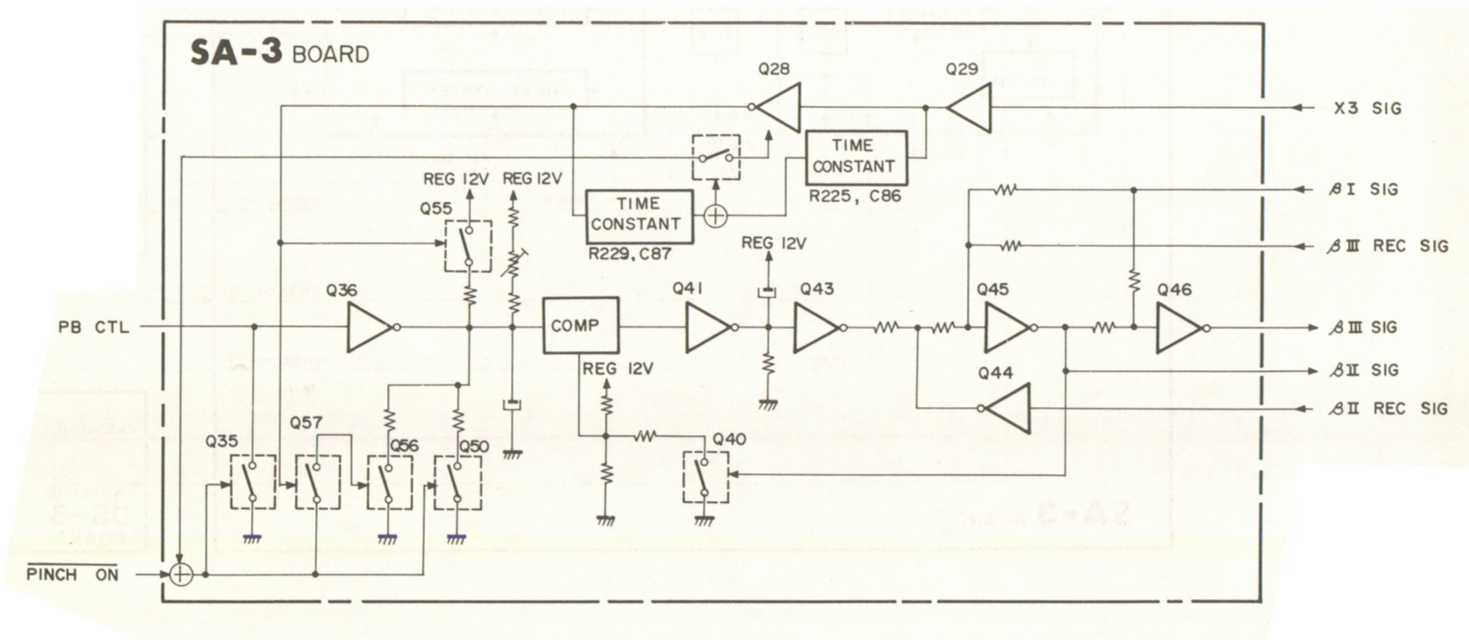
–PB MODE–



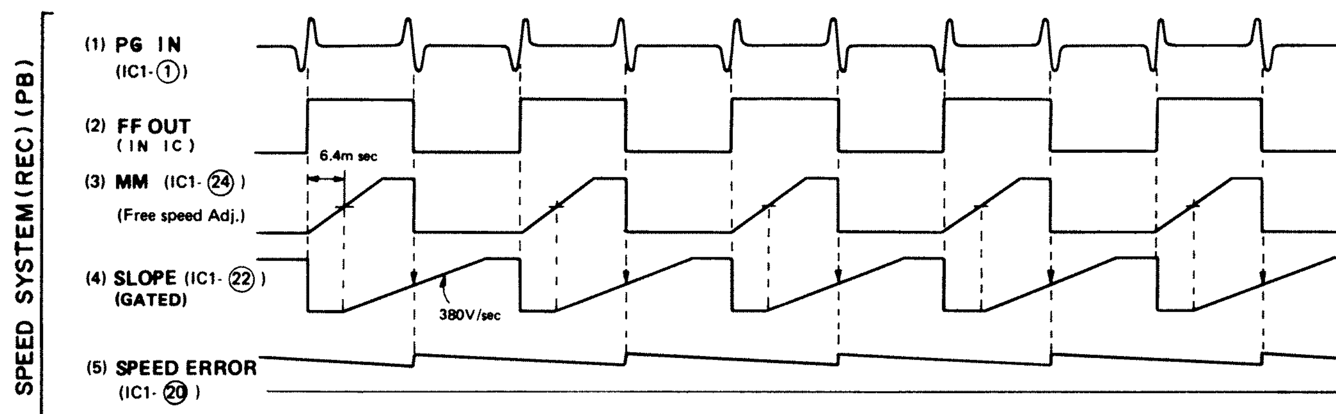
BETASCAN (CUE & REVIEW) DRUM SPEED CONTROL BLOCK DIAGRAM

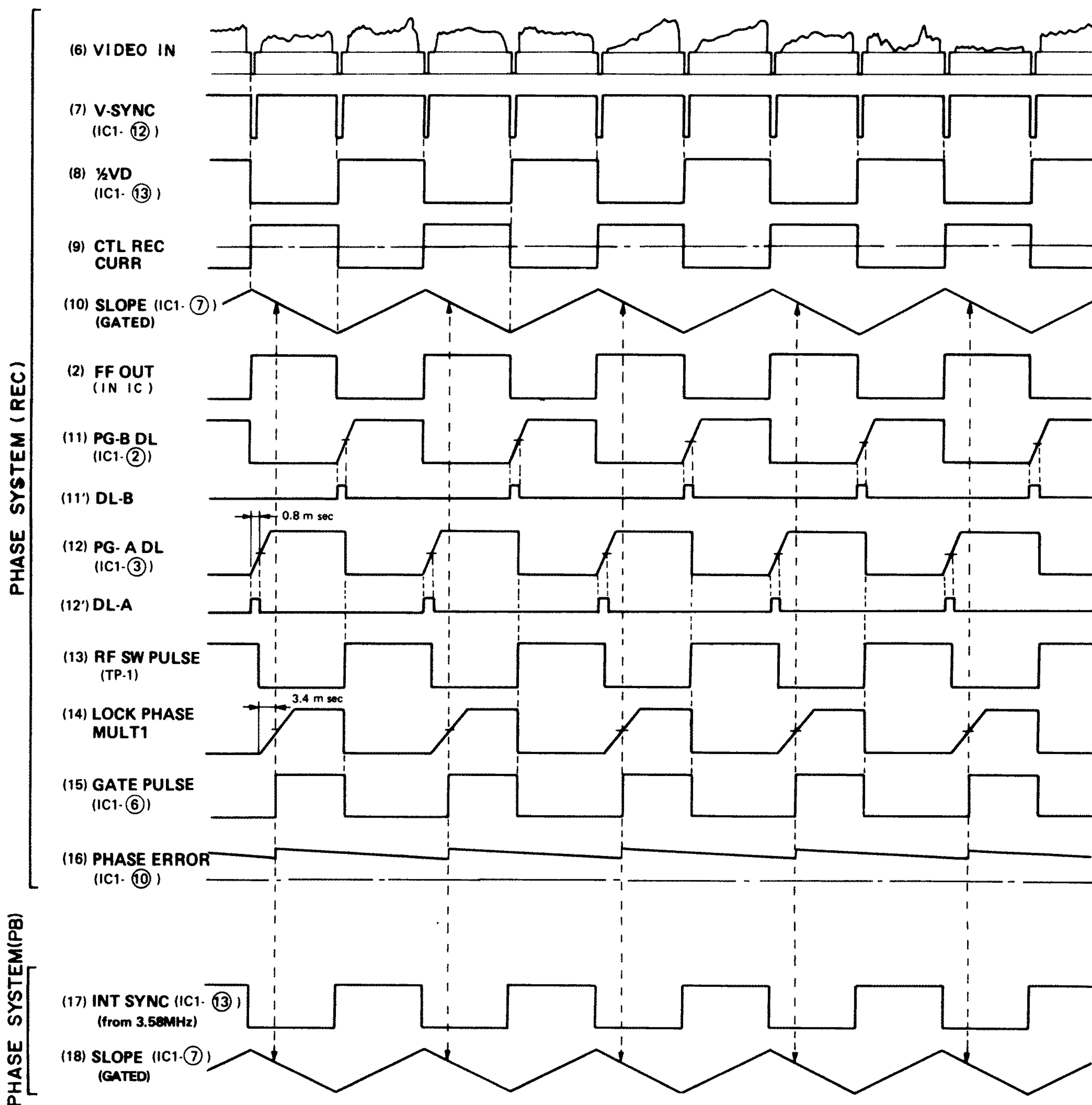


TAPE SPEED DETECTOR BLOCK DIAGRAM

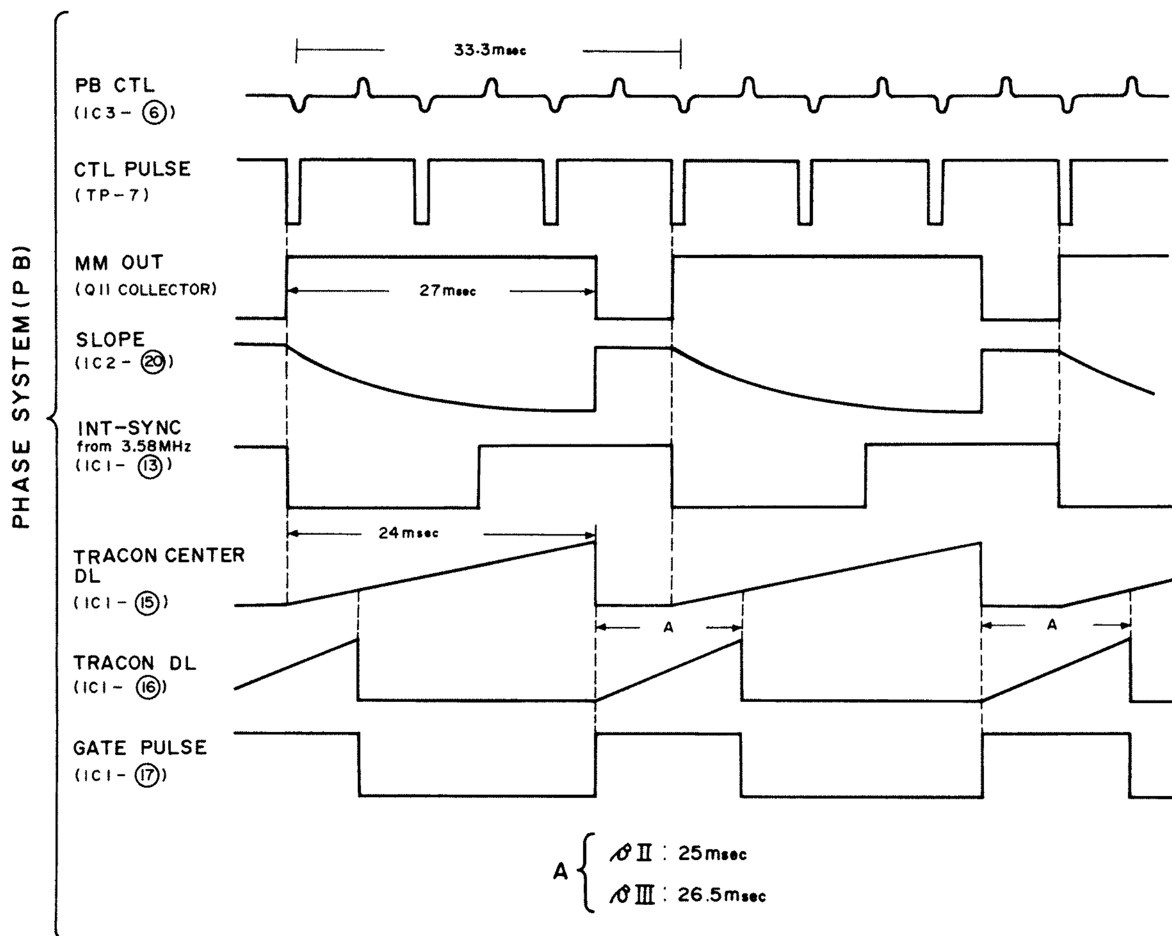


DRUM SERVO TIMING CHART

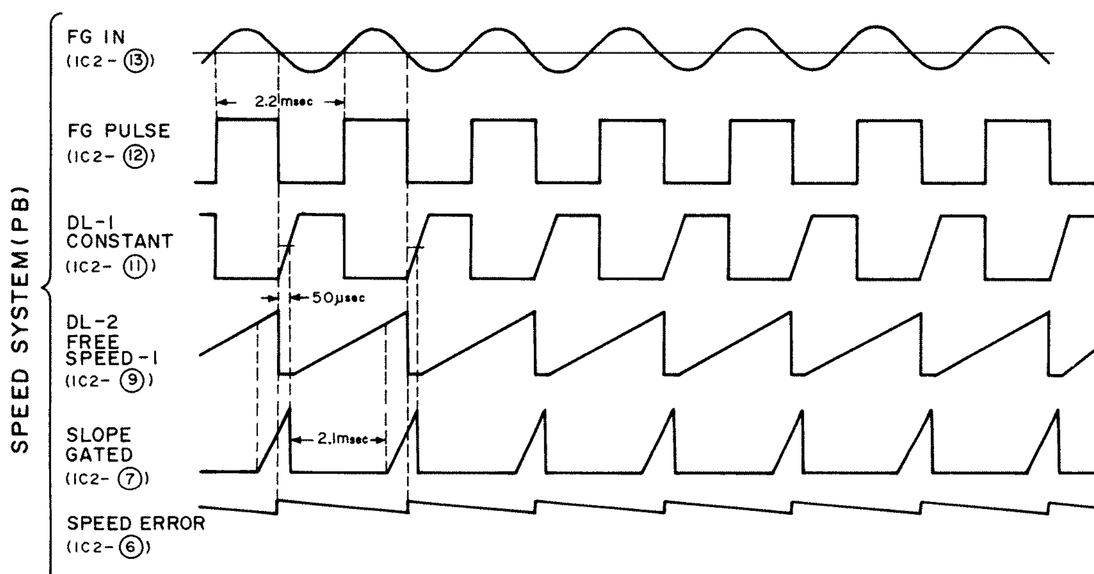




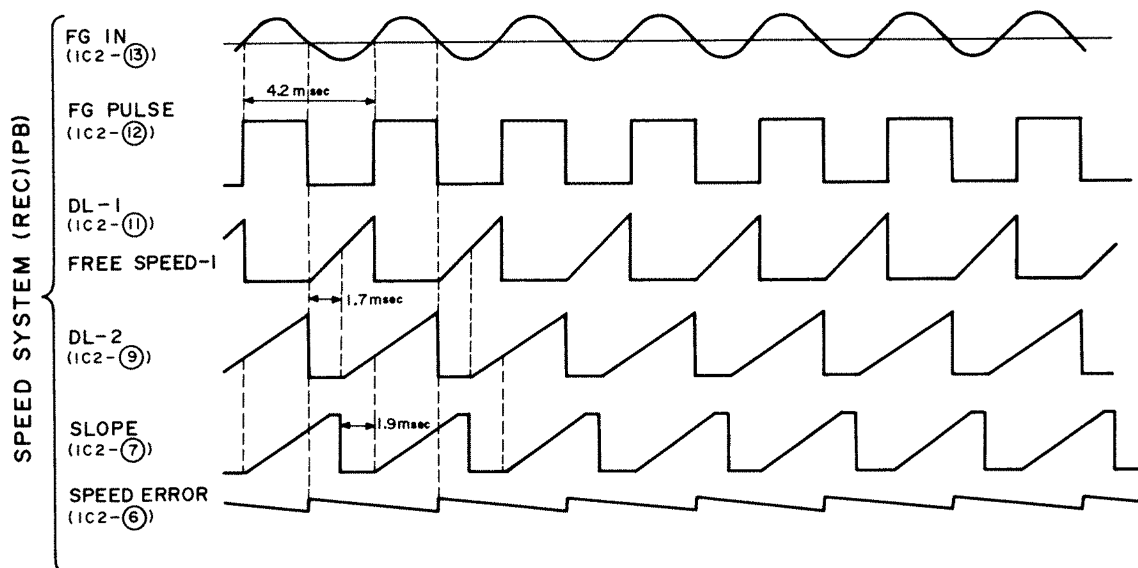
CAPSTAN SERVO TIMING CHART (X3)

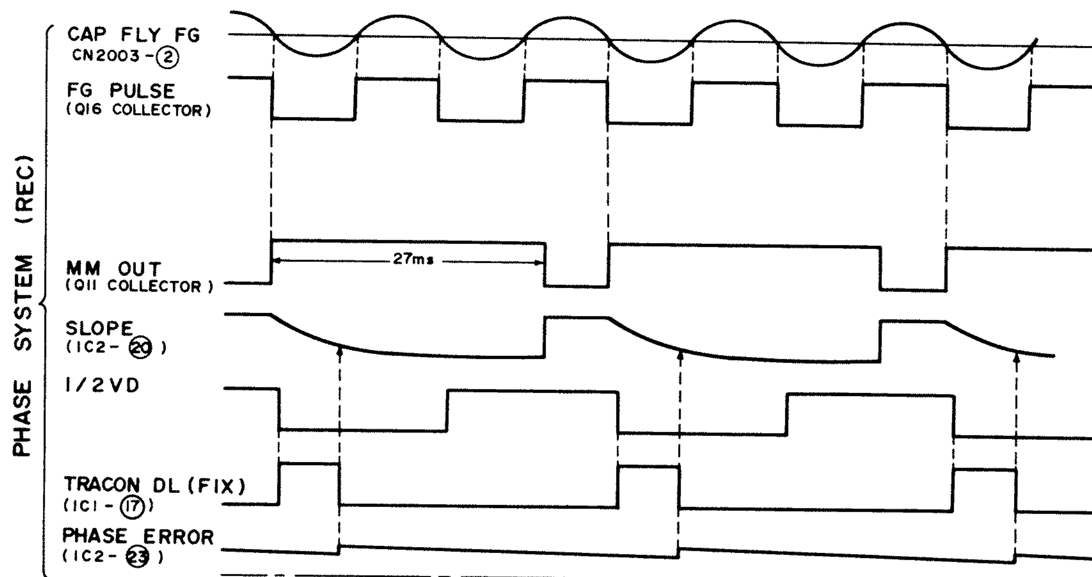


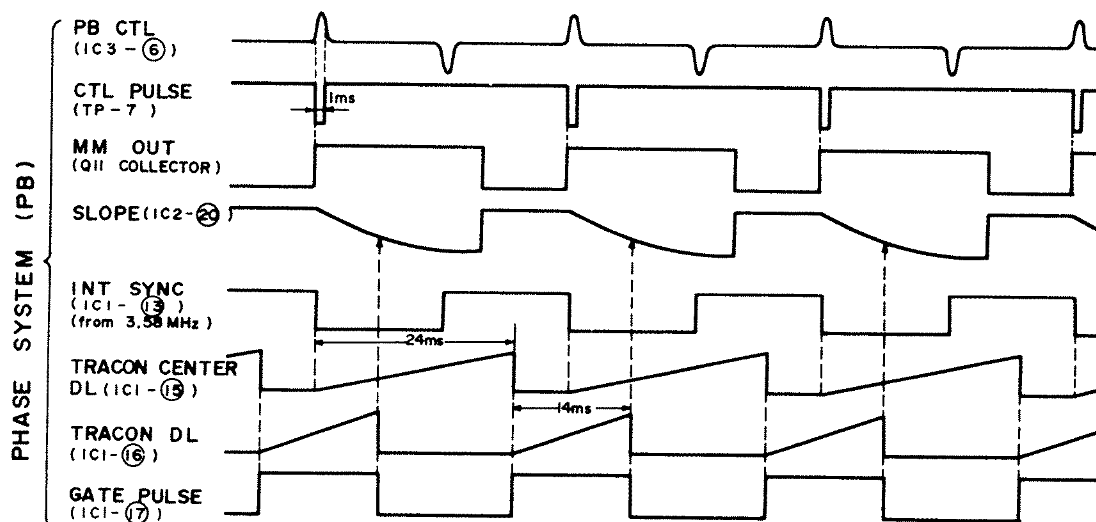
CAPSTAN SERVO TIMING CHART (βI)



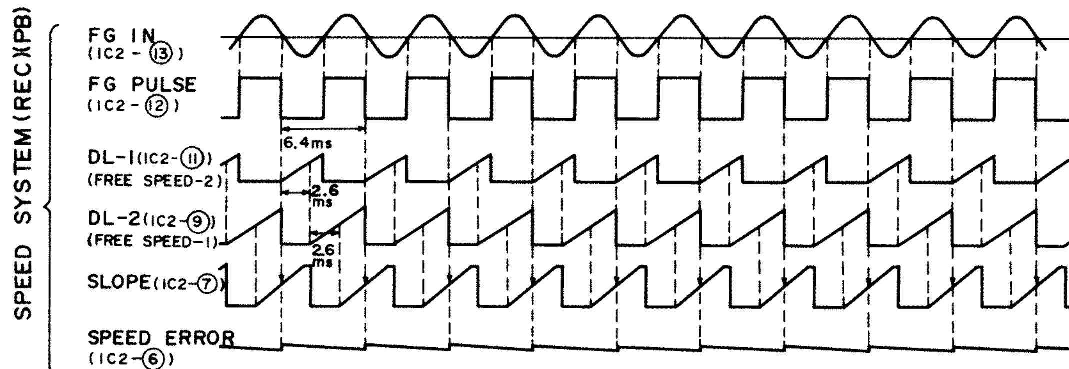
CAPSTAN SERVO TIMING CHART (βII)

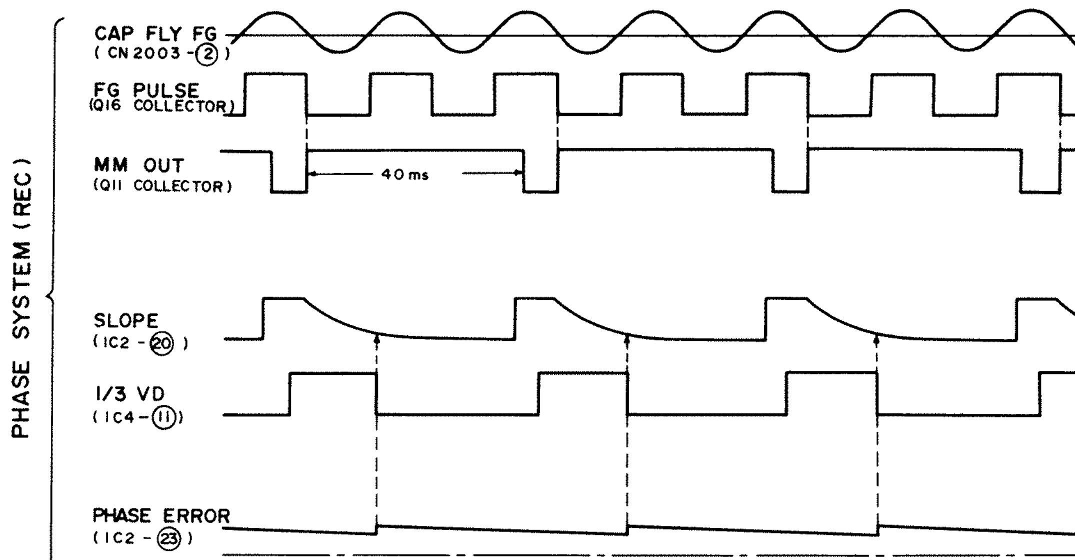


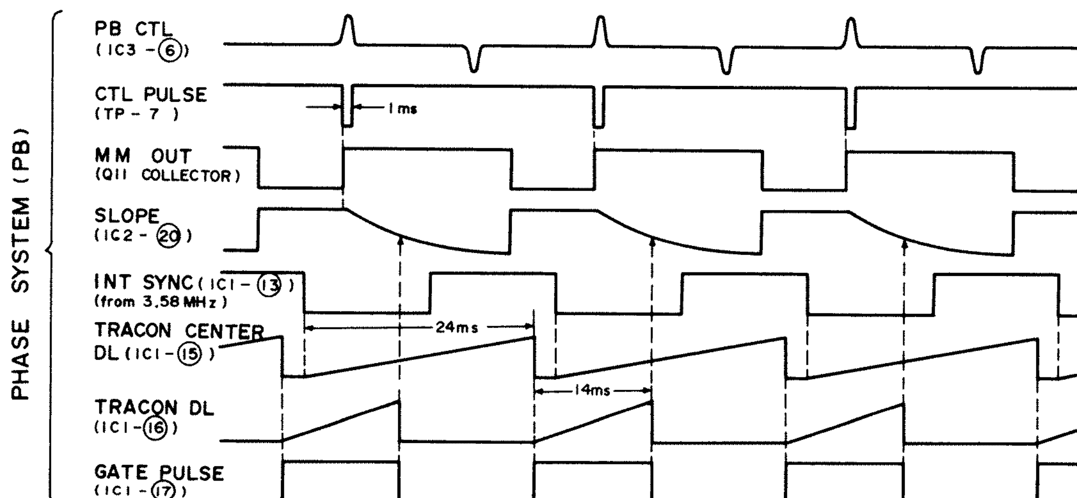




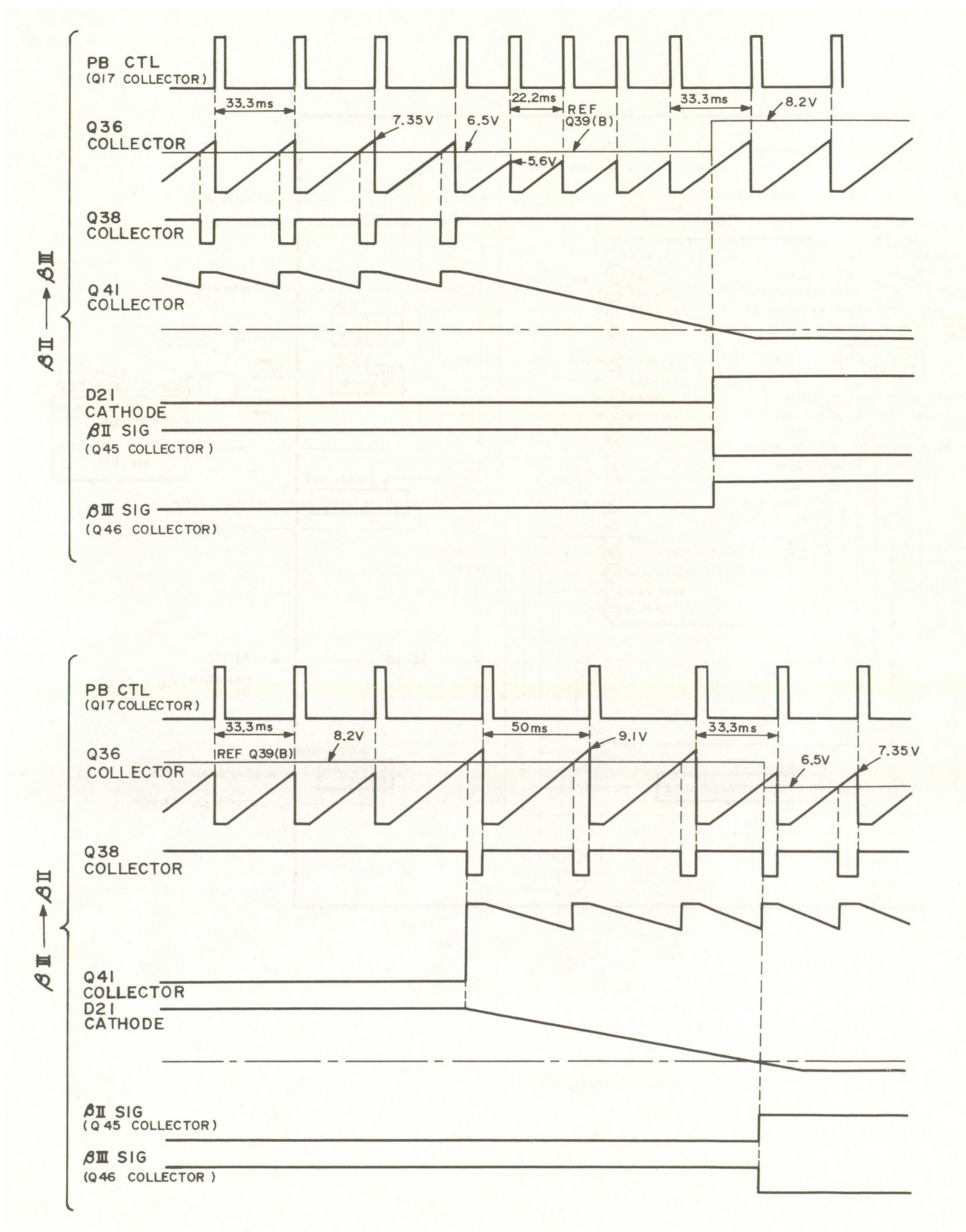
CAPSTAN SERVO TIMING CHART (βIII)



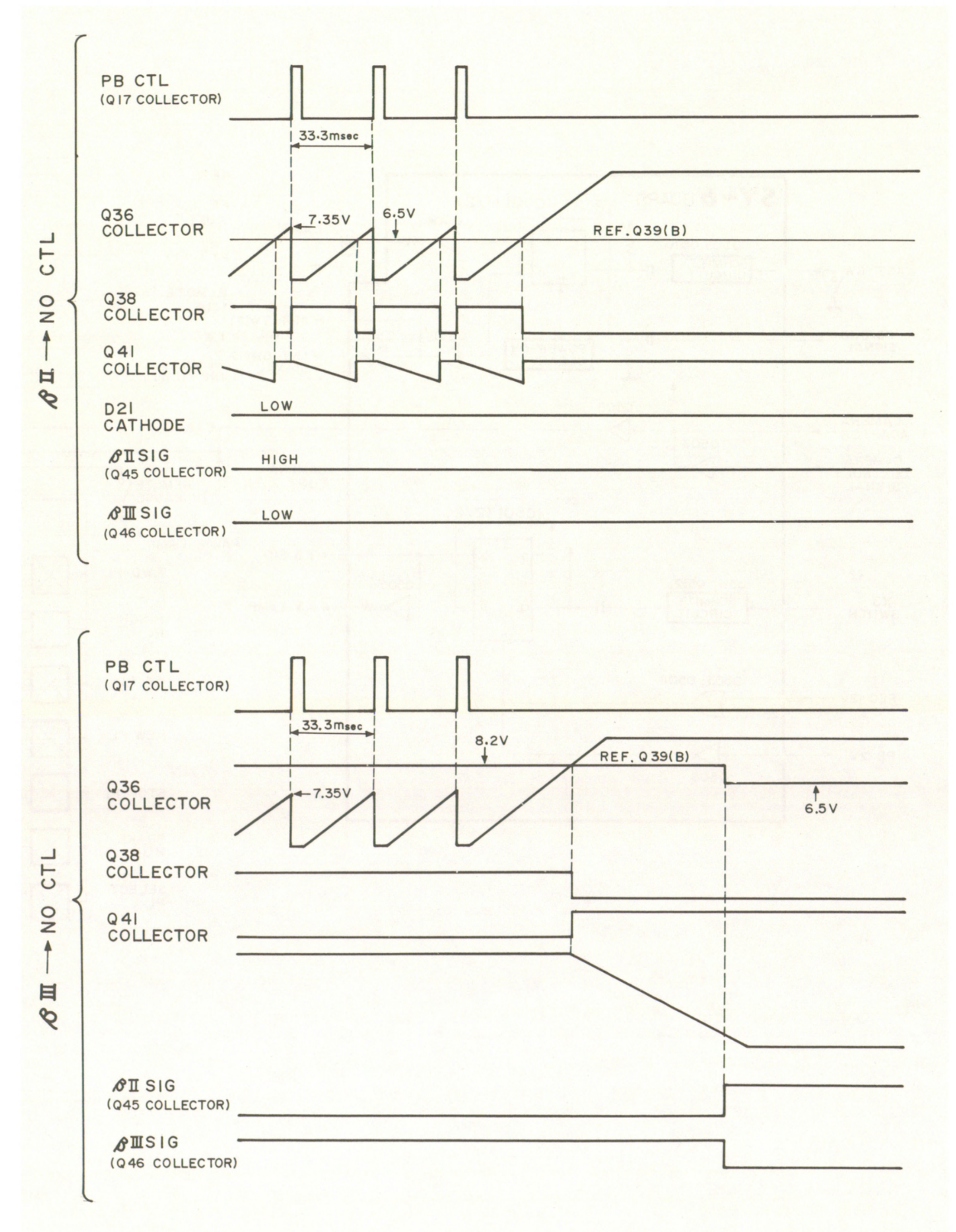




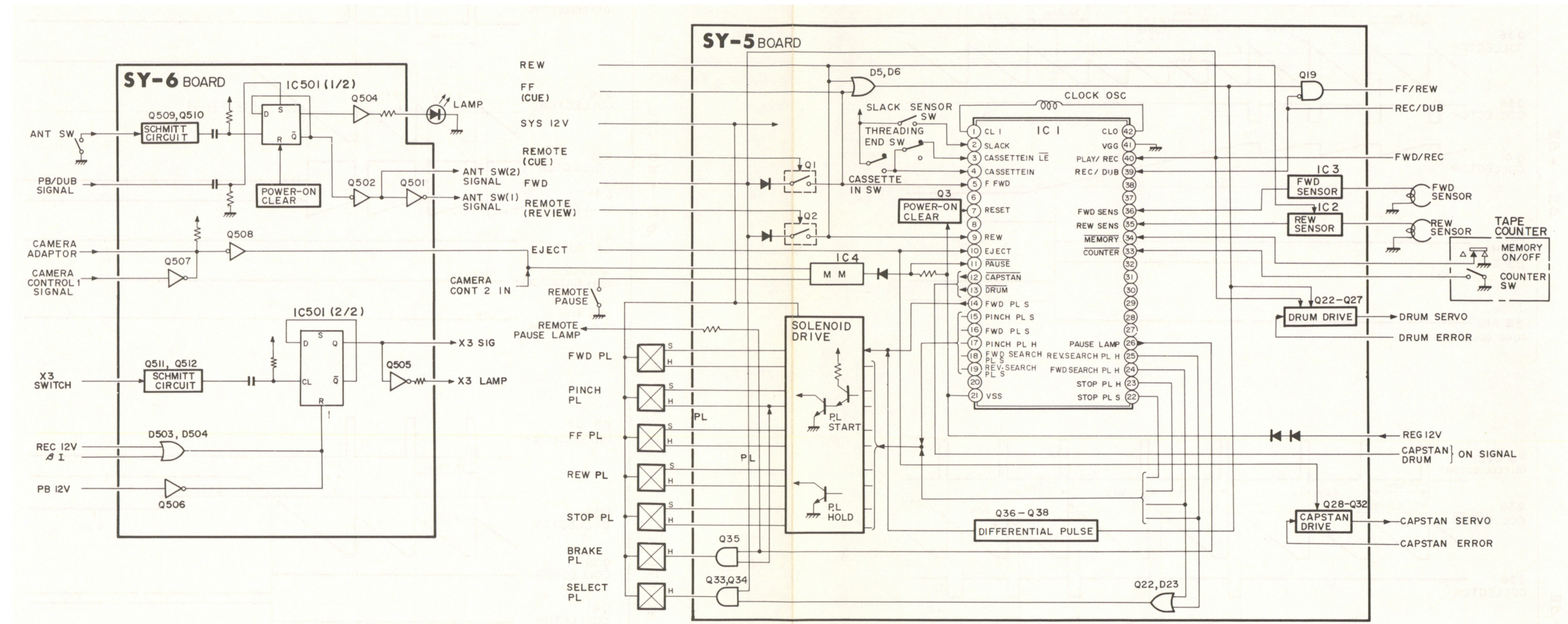
TAPE SPEED AUTOMATIC SWITCHING TIMING CHART (1)



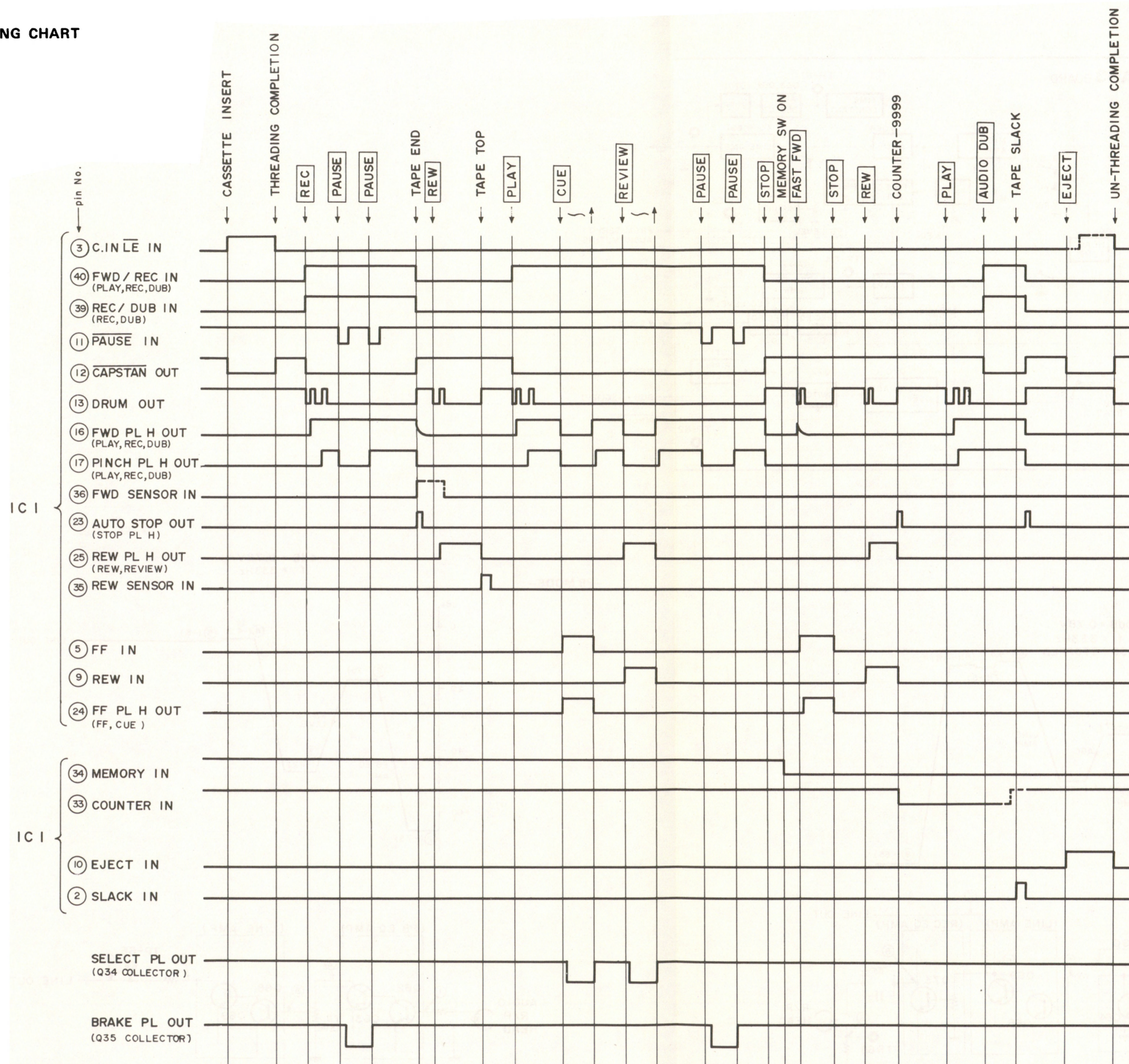
TAPE SPEED AUTOMATIC SWITCHING TIMING CHART (2)



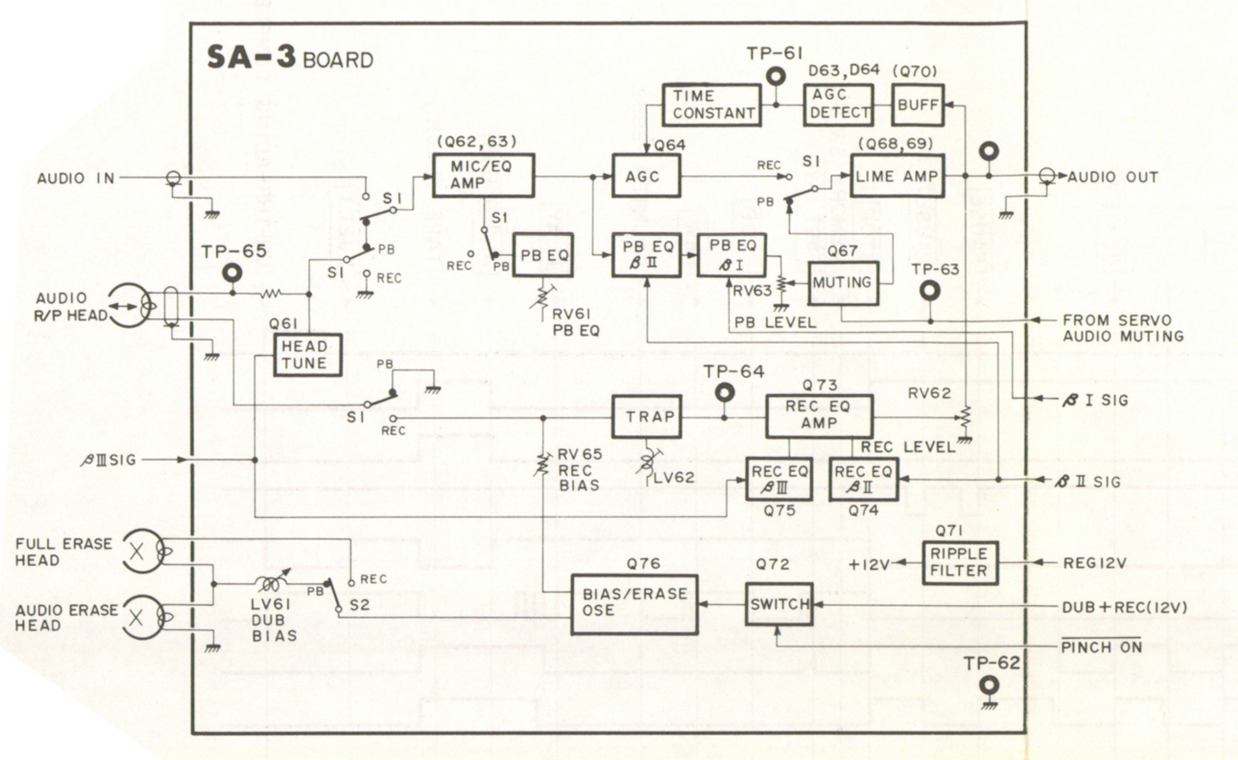
SYSTEM CONTROL BLOCK DIAGRAM



SYSTEM CONTROL TIMING CHART

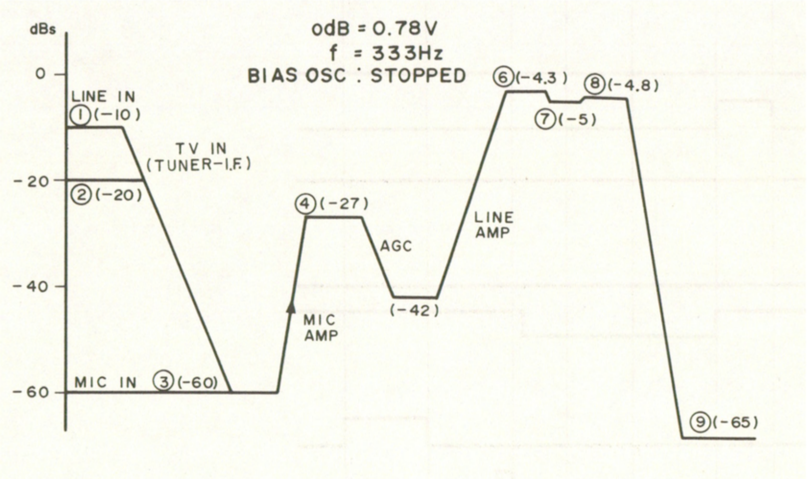


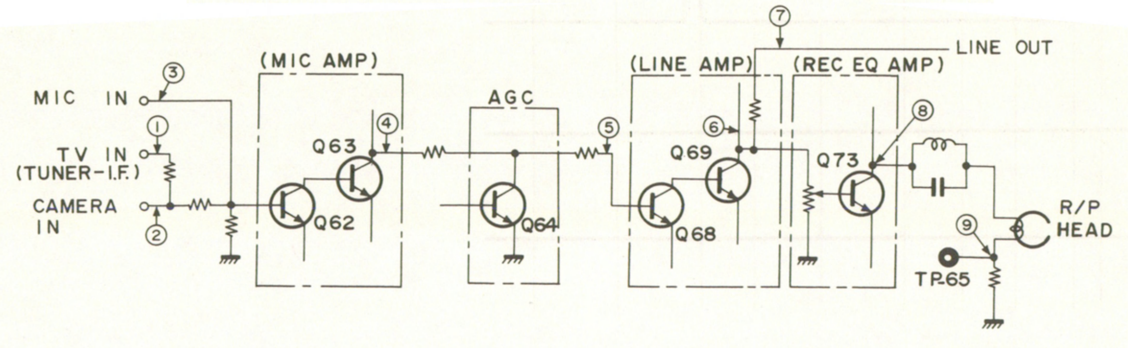
AUDIO BLOCK DIAGRAM



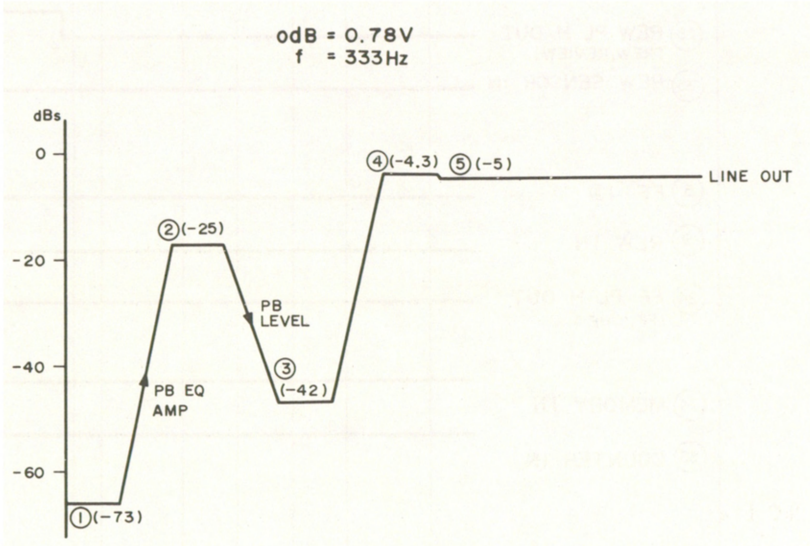
AUDIO LEVEL DIAGRAM

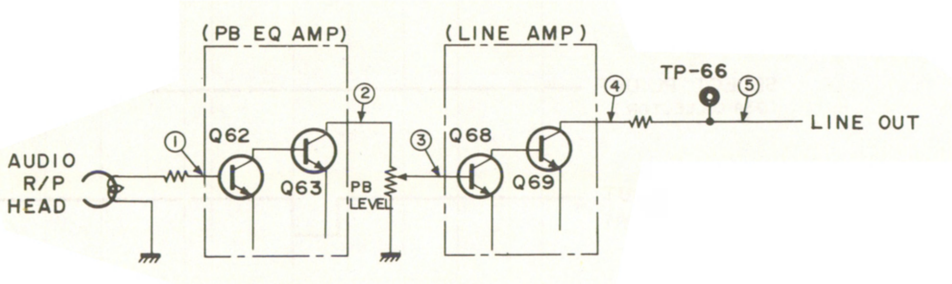
—REC MODE—



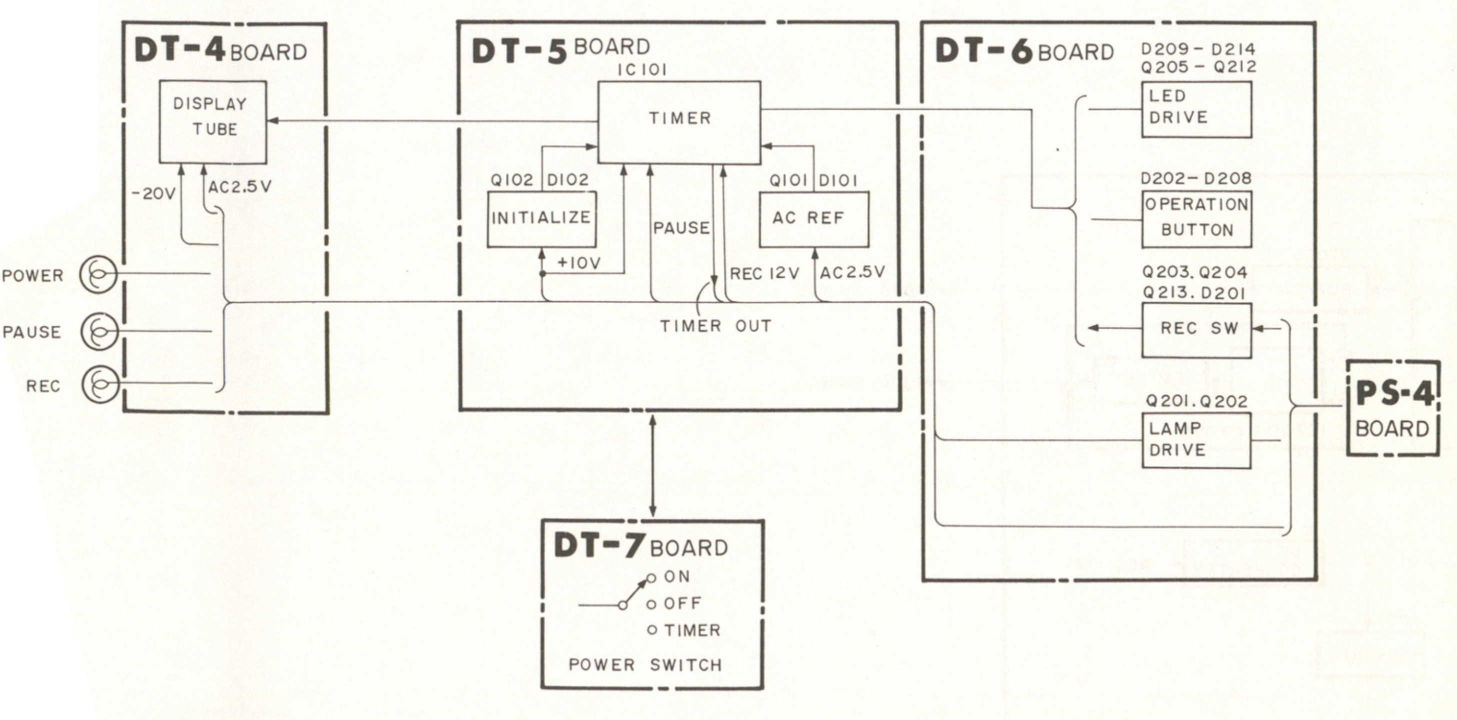


—PB MODE—

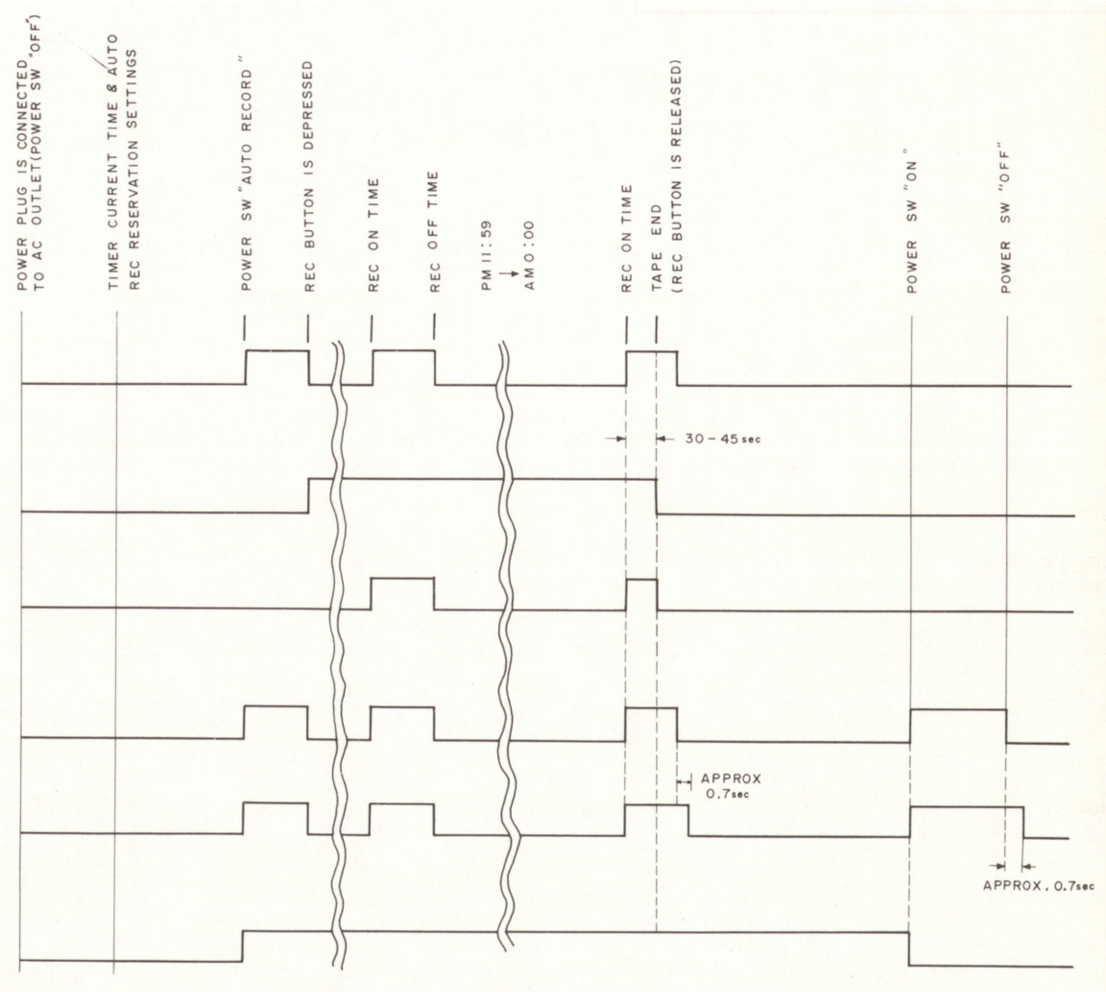




TIMER BLOCK DIAGRAM



TIMER TIMING CHART



IC101-⑬
+12V ON PS-4 BOARD IS CONTROLLED WHEN POWER SWITCH IS IN "TIMER" POSITION.

CN3201-⑨ (REC SW)
WHEN REC BUTTON IS DEPRESSED "H"
WHEN REC BUTTON IS RELEASED "L"

CN3201-⑪
TURN-ON TIME INDICATOR CONTROL

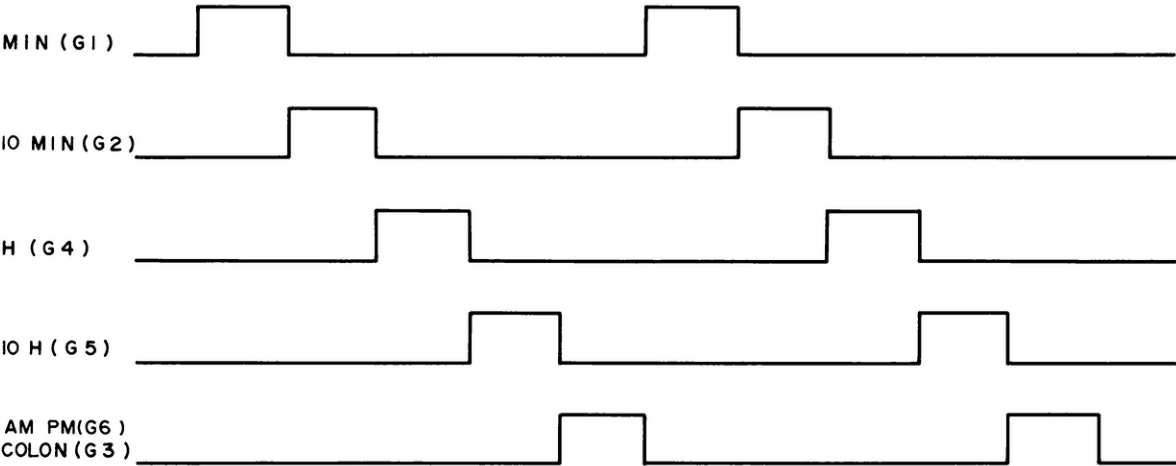
CN3201-⑤ (TIMER OUT)
PS-4 BOARD +12V CONTROL

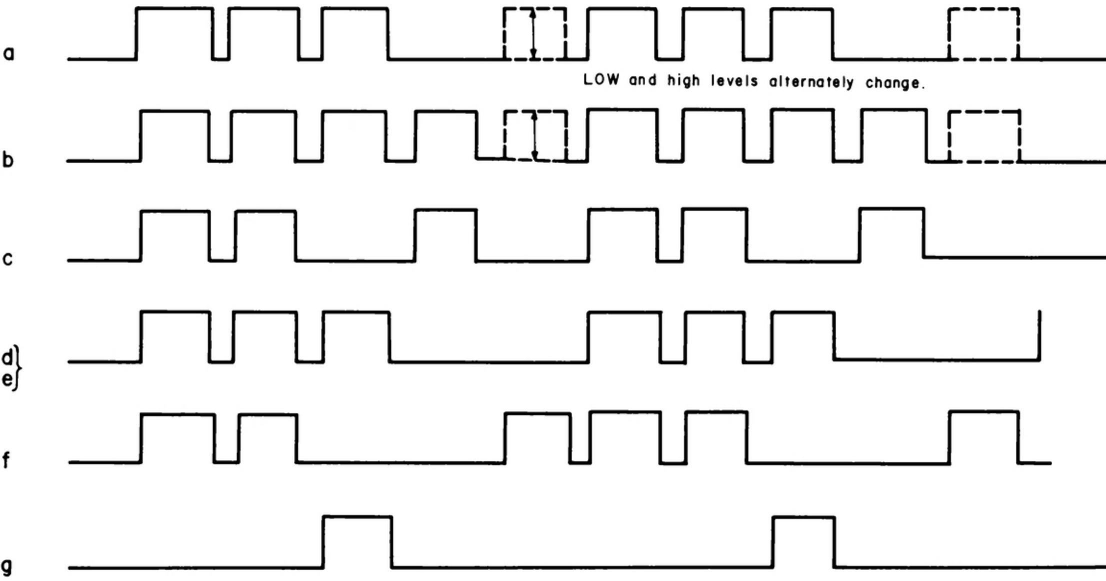
SYS 12V
(POWER LAMP)

IC101-㊵
POWER SW MODE IDENTIFICATON

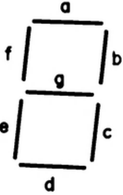
TIMER INDICATOR TIMING CHART

When the AC power plug is installed to a wall outlet, timing chart is as follows
(flourescent display tube indication is at PM 12:00)

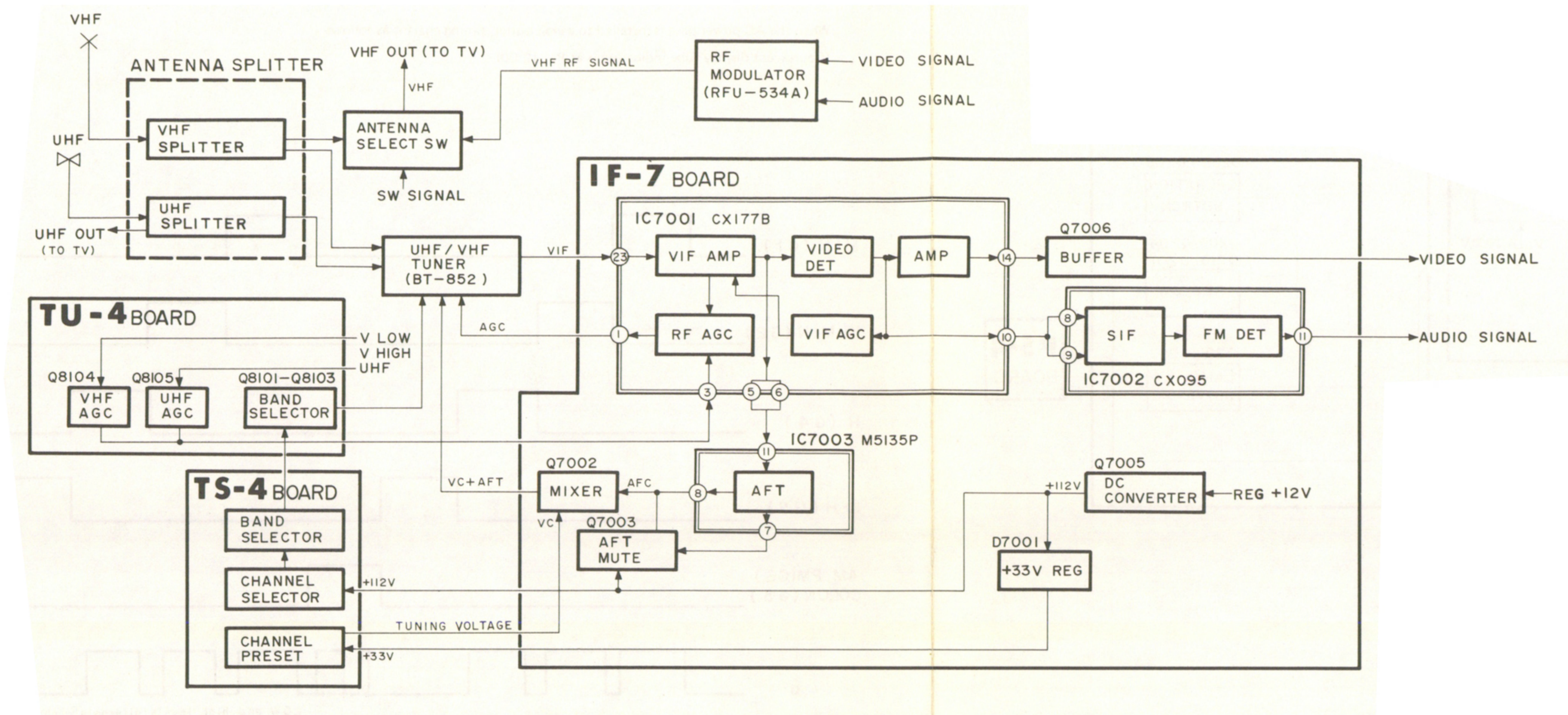




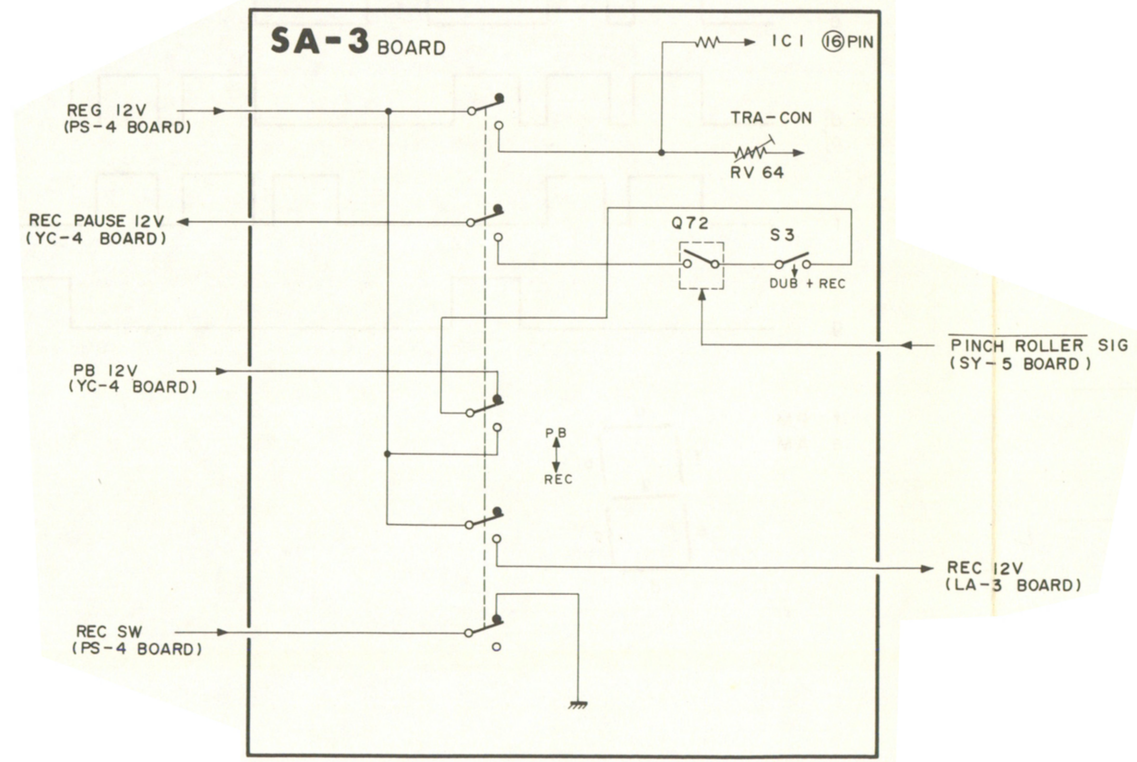
f: PM
e: AM



TUNER-I.F. BLOCK DIAGRAM

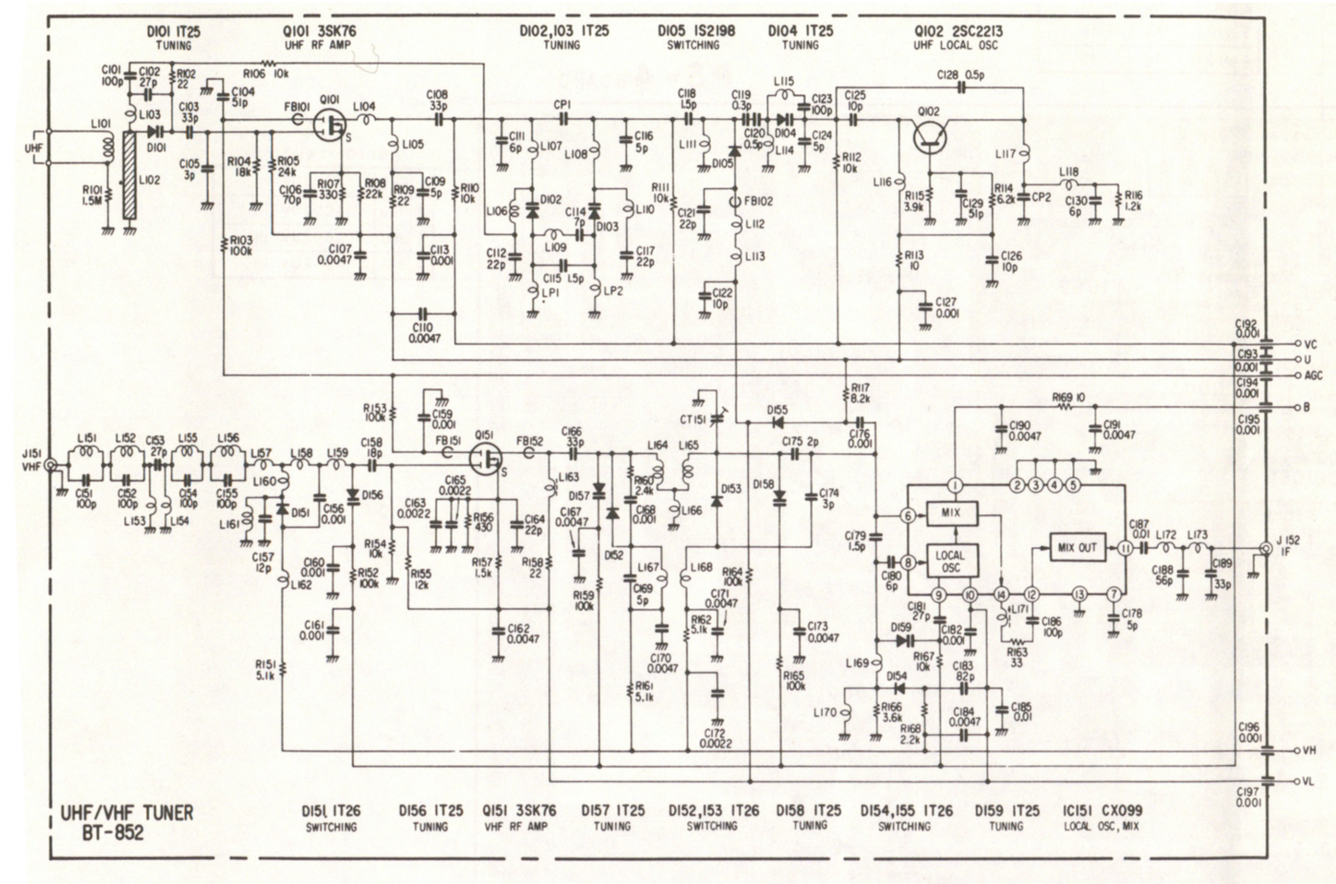


SA-3 BOARD SWITCH FOR REC/PB BLOCK DIAGRAM



SECTION 3
PRINTED WIRING BOARD AND SCHEMATIC DIAGRAMS

TUNER SCHEMATIC DIAGRAM
—UHF/VHF TUNER BT-852—



V_C = Tuning voltage

U = UHF tuner B+

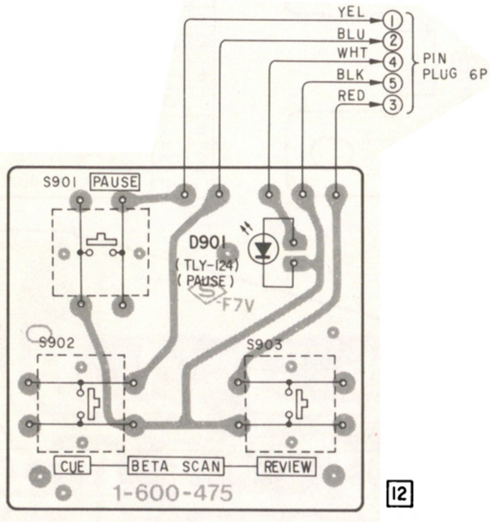
V_H = VHF high channel switching voltage

B = Mixer B+ VHF tuner

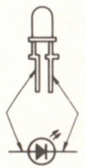
V_L = RF osc, B+, VHF tuner

Tuner reference numbers are not included in the Electrical Parts List.

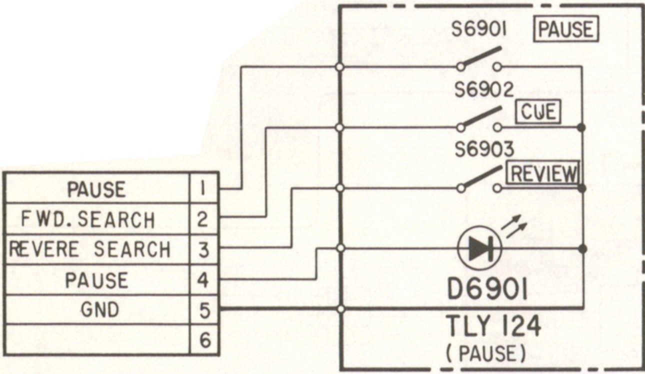
BETASCAN (CUE/REVIEW) PRINTED WIRING BOARD
– REF. No. 6900 series –



TLY 124

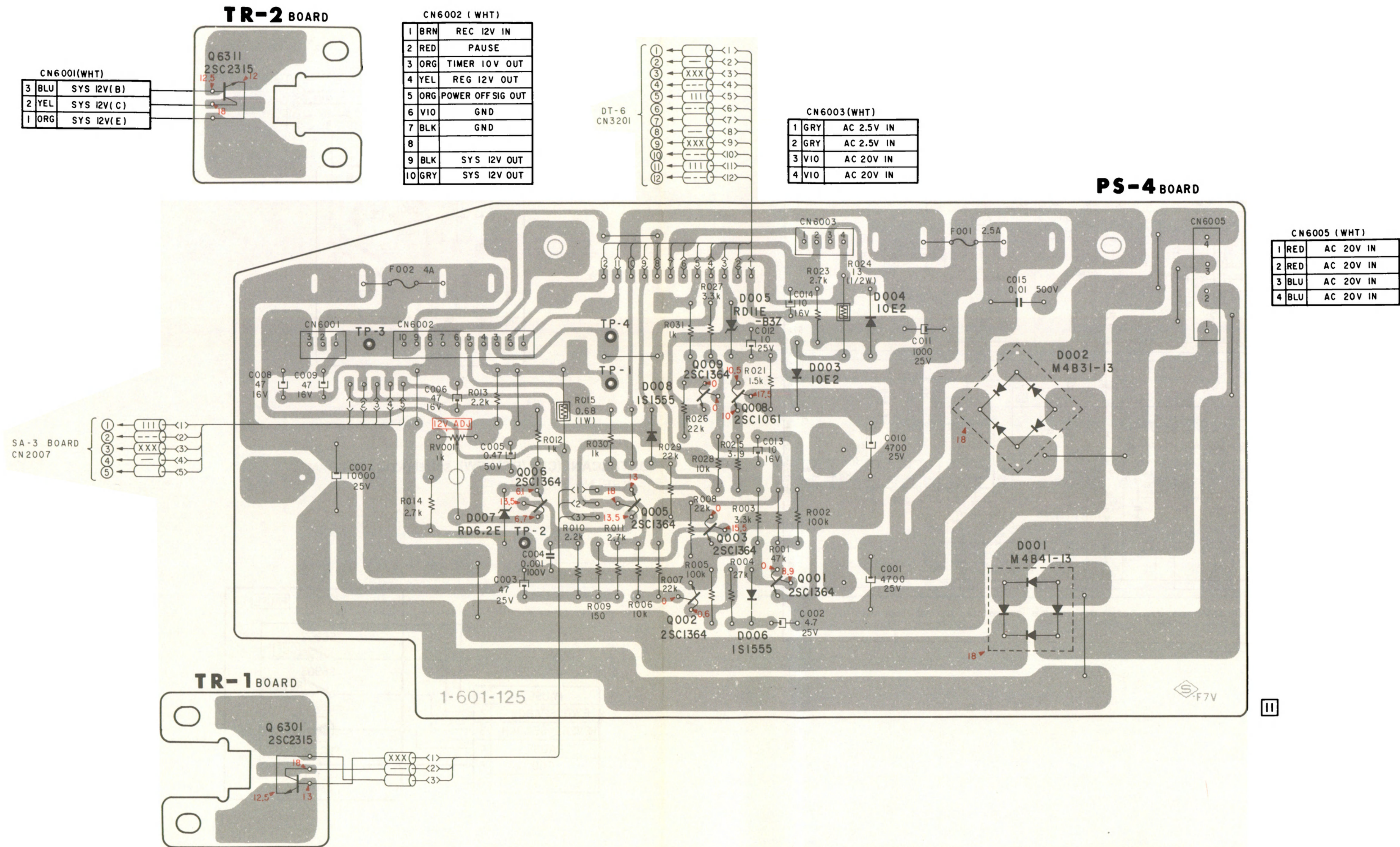


BETASCAN (CUE/REVIEW) SCHEMATIC DIAGRAM
– REF. No. 6900 series –

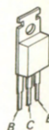


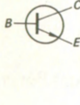
PS-4 (POWER SUPPLY) and TR-1/TR-2 (POWER TRANSISTOR) PRINTED WIRING BOARDS

—REF. No. 6000 series—



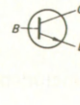
2SC1061





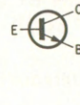
2SC1364



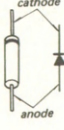


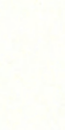
2SC2135





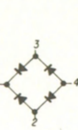
1S1555
10E2
RD6.2E
RD11E-B3Z



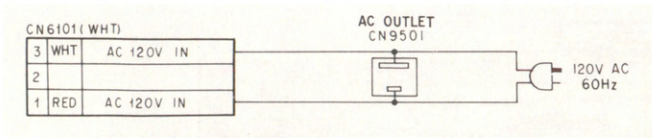


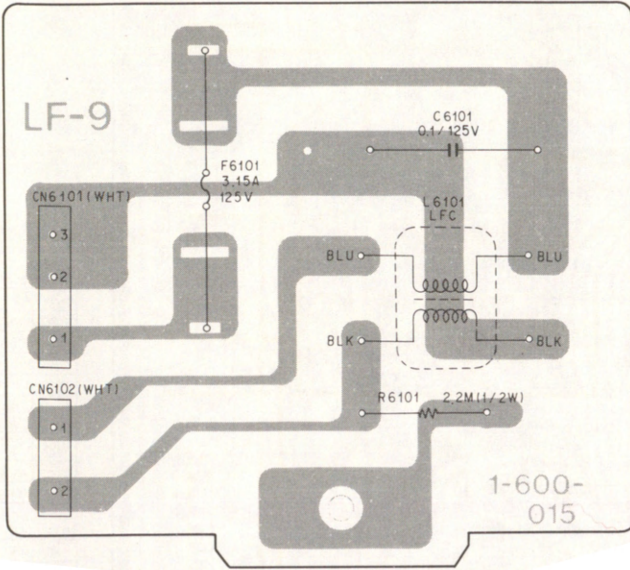
M4B31-13

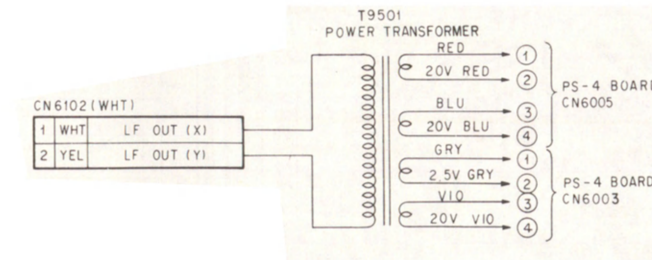




LF-9 (LINE FILTER) PRINTED WIRING BOARD

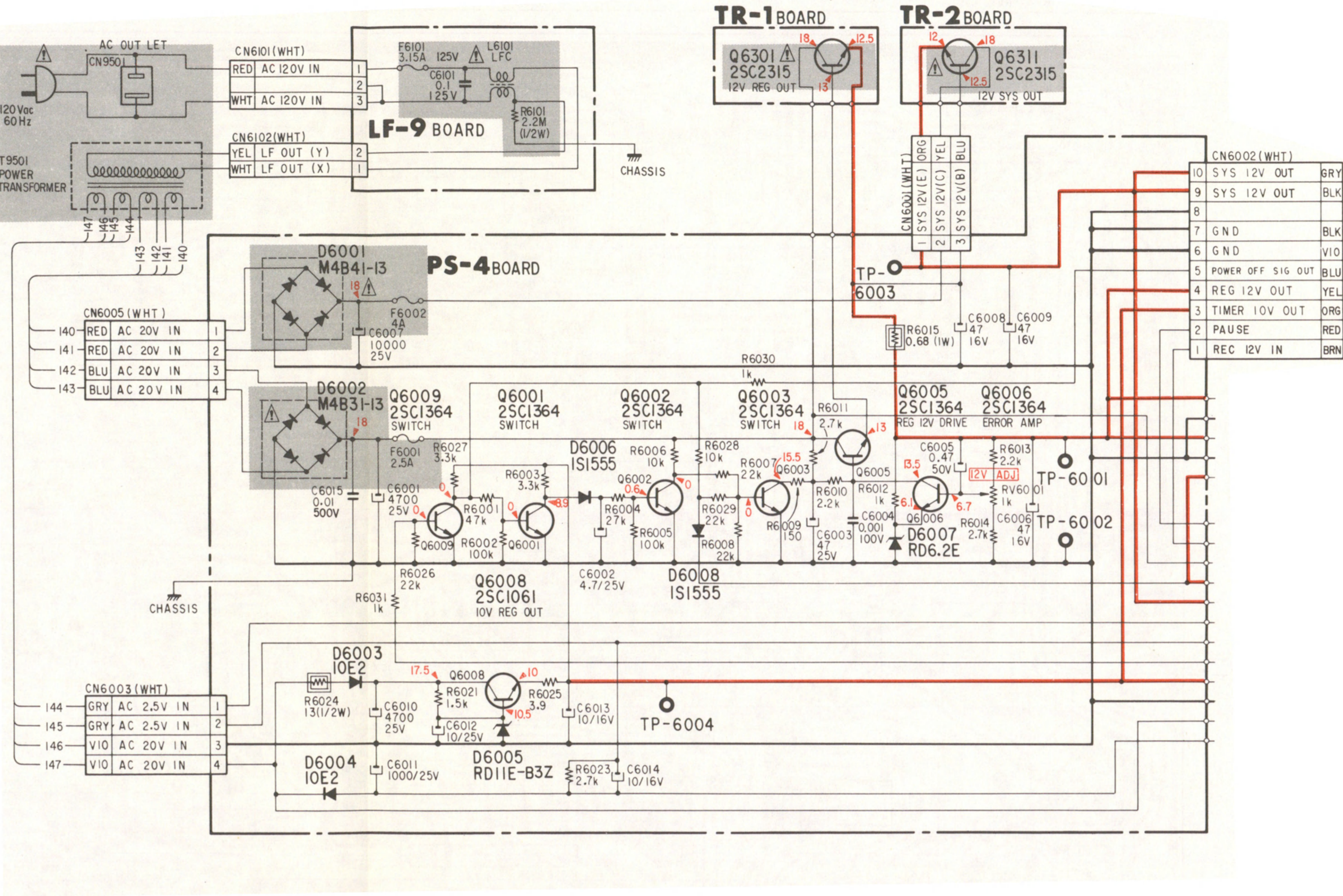






PS-4 (POWER SUPPLY), TR-1/TR-2 (POWER TRANSISTOR) AND LF-9 (LINE FILTER) BOARDS SCHEMATIC DIAGRAM

—REF. No. PS-4 BOARD 6000 series—



NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊣WW⊢ : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
- Readings are taken with E-E mode.

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

YC-4 (Y & CHROMA SIGNALS RECORD / PLAYBACK PROCESS)
PRINTED WIRING BOARD —REF. No. 1000 series—

YC-4

YC-4

IC, Q	21 57 58 22 59 67 65 66 IC4 IC3 16 17 IC2 19 18 20 43 70 68 44 45 69 35 74 71 72 64 63 36 34 33 IC7 73 37 38 46 47 14 15 IC5 62 50 48 55 49 12 13 60 61 51 IC1 7 6 5 4 25 24 IC6 1 26 28 3 .. 54 27 8 2 IC8 30 29 53 40 76 41 75 52 39
D	30 12 11 10 32 33 13 14 34 15 16 17 18 5 4 6 9 7 1 2 3 31 23 27 28 29
ADJ	RV7 RV1 RV9 L12 RV10 RV4 RV3 RV11 RV12 RV14 RV15 RV17 RV2 RV16 RV18 RV5

S2 CAMERA/TUNER

TUNER

CAMERA

CN J1 VIDEO IN

CN J3 AUDIO IN

SA-3 BOARD

RED

CN J2 VIDEO OUT

CN J5 AUDIO OUT

S1 PCM

PCM

FILTER BLOCK

CN1006 (BLK)

10	GRY	$\overline{\beta II}$
9	RED	VIDEO OUT (X)
8	WHT	VIDEO (Y)
7	WHT	VIDEO IN (X)
6	—·—	X3 SIG IN
5	III	JUMP P IN
4	---	M.C. SIG OUT
3	XXX	H SYNC OUT
2	—	RF SW P OUT
1		REG 12V OUT

CN1005 (WHT)

8	BLU	TUNER MUTE OUT
7	YEL	GND
6	ORG	REG 12V OUT
5	RED	VIDEO IN (Y)
4		VIDEO IN (X)
3	BLK	AUDIO IN (Y)
2		AUDIO IN (X)
1		

CN1003 (WHT)

6		VIDEO OUT (X)
5	BLU	VIDEO OUT (Y)
4	ORG	AUDIO OUT (Y)
3		AUDIO OUT (X)
2	RED	REG 12V OUT
1	BLK	GND

CN1002 (BLK)

4	RED	REC. C. RF. OUT
3	WHT	REC. Y. RF. OUT (Y)
2		REC. Y. RF. OUT (X)
1	BRN	REC. $\overline{P}$. 12V OUT

CN1001 (WHT)

10		DOC. RF OUT (X)
9	BLK	DOC. RF OUT (Y)
8	YEL	PB/DUB 12V OUT
7	RED	PB. Y. RF IN (Y)
6	WHT	PB. Y. RF IN (X)
5		ACK SIG OUT
4	WHT	PB. C. RF IN (Y)
3		PB. C. RF IN (X)
2	RED	M.C SIG OUT
1	BRN	RF SW P OUT

CN1008 (WHT)

1		
2		REG 12V IN
3	—	GND
4	XXX	REC 12V IN
5		RF SW P IN
6	—	MUTE SIG IN
7	XXX	SERVO REF OUT
8	---	M.C. SIG IN
9	III	X3 SIG
10	—·—	βII CR

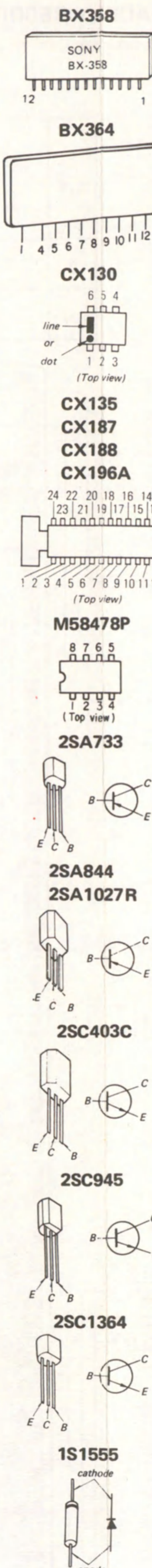
CN1009 (WHT)

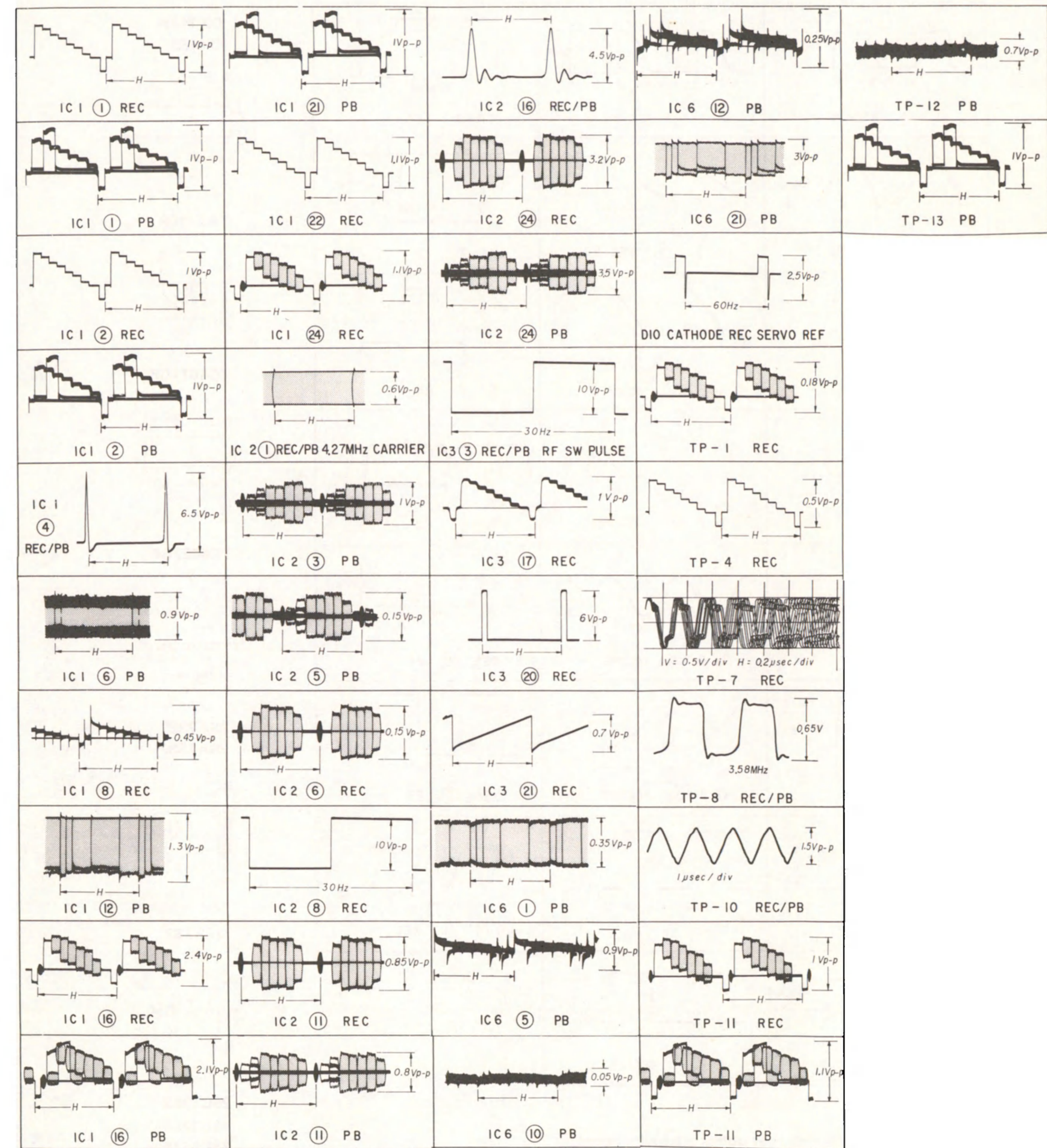
βI SIG IN		1
PB 12V IN	—	2
AUDIO GND	XXX	3
AUDIO OUT	---	4
βIII HIGH	III	5

11

YC-4 (Y & CHROMA SIGNALS RECORD / PLAYBACK PROCESS) SCHEMATIC DIAGRAM

—REF. No. 1000 series—





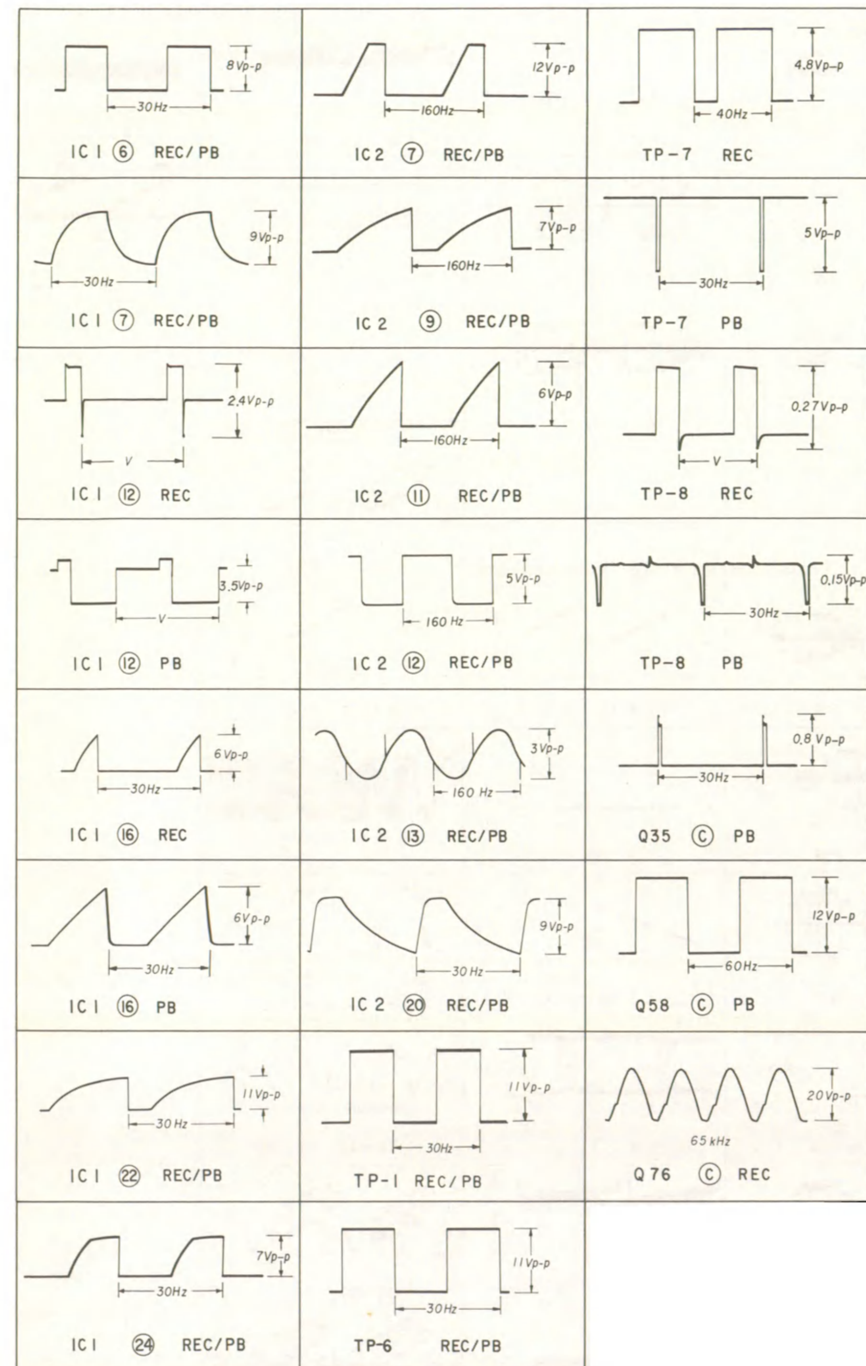
NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- [resistor symbol] : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ) : βII PB mode
  no mark : βIII REC mode

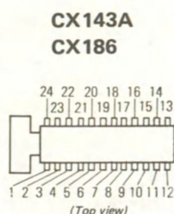
YC-4 BOARD

SA-3 (SERVO, AUDIO RECORD/PLAYBACK PROCESS) PRINTED WIRING BOARD

—REF. No. 2000 series—



CX143A
CX186



TA7120P

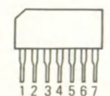
TC4011BP

(Top view)

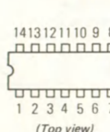
TC4027BP

(Top view)

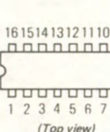
2SA733
2SA733P



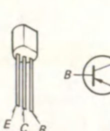
2SB733



2SC1362
2SC1364
2SC1475



1S1555
1S1587
RD6.2E



IC, Q	75 73 74 71 70 76 66 65 69 35 36 41 67 61 38 68 39 63 50 72 62 56 55 64 40 57 28 79 43 34 30 29 32 7 46 6 44 8 33 31 45 58 78 IC1 IC5 47 49 27 1 5 20 21 26 12 11 10 13 54 53 17 IC4 24 16 25 18 15 IC2 19 77 4 59 48 2 3 14 IC3
D	62 63 67 14 22 64 65 61 66 21 68 69 70 3 5 7 33 31 18 19 27 26 17 30 6 28 12 11 16 13 32 25 15 24 4 1 29 2 8 9 10
ADJ	RV62 RV64 RV65 LV62 LV61 RV63 RV7 RV61 RV6 RV8 RV9 RV10 RV1 RV2 RV3 RV4 RV5 RV11

CN2009 (WHT)

3	XXX	REC βⅢ
2	—	REC 12V OUT
1		REC βⅡ

CN2001 (WHT)

12	BLU	FWD/REC
11	ORG	REC/DUB OUT
10	RED	PB + DUB 12V OUT
9	BRN	βI SIG OUT
8	WHT	PINCH ROLLER SIG IN
7	GRY	FF/REW IN
6	VIO	DRUM ERROR OUT
5	BLU	DRUM CONT IN
4	YEL	THREADING IN
3	ORG	X3 SIG IN
2	RED	CAP ERROR OUT
1	BRN	CAP CONT IN

CN2004 (RED)

3	BLK	P G. COIL (Y)
2		
1	WHT	P G. COIL (X)

CN2008 (WHT)

8	WHT	AUDIO HEAD (X)
7	RED	AUDIO HEAD (Y)
6	BLK	AUDIO HEAD (G)
5	WHT	ERASE HEAD (X)
4	RED	ERASE HEAD (Y)
3	RED	ERASE HEAD (G)
2		CTL HEAD (X)
1	WHT	CTL HEAD (Y)

CN2002 (WHT)

3	ORG	CTL SIG
2	RED	CAP. FG (Y)
1	RED	CAP. FG (X)

CN2007 (WHT)

5	III	REG 12V (SERVO)
4	---	GND (SERVO)
3	XXX	REG 12V (AUDIO)
2	—	GND (AUDIO)
1		REC SW

CN2003 (BLK)

3	XXX	GND
2	—	FG IN
1		REC 12V

YC-4 BOARD CN1008

YC-4 BOARD CN1009

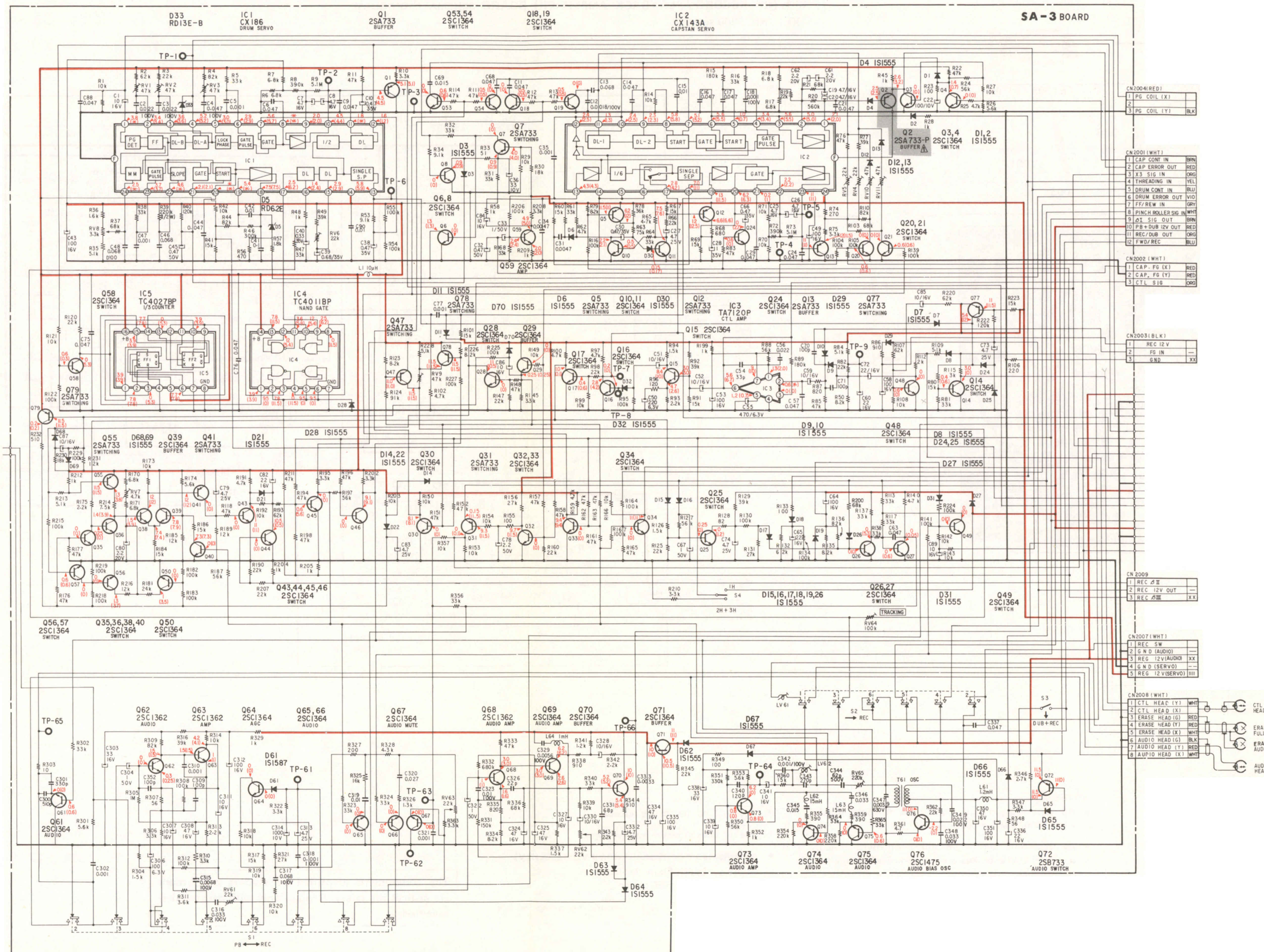
YC-4 BOARD

DS-3 BOARD CN9001

SA-3

NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : $\mu\mu$F 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- —[W]— : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ): βIII PB mode
  no mark: βIII REC mode



βII REC MODE

Q	2	3	13	21	33	34	38	39	40	43	44	45	46	53	54	61	65	74
B	3.1	0	8.5	0	0.6	0.6	1	6.3	0.6	0	0.65	0	0.6	0	0	0	0.6	0.6
C	GND	3.9	GND	3.9	0	0	12	12	0	6.5	0	8.4	0	0.6	2.4	GND	GND	GND
E	3.9	GND	9	GND	GND	GND	5.8	5.8	GND	GND	GND	GND	GND	GND	GND	0	0	0

IC2

PIN	1	2	3	4	5	6	7	8	9	10	11	12
VOLTAGE	3	5.1	3.5	3.4	0.6	5.5	4.7	5.8	2.3	2.5	1.8	2.5
PIN	13	14	15	16	17	18	19	20	21	22	23	24
VOLTAGE	4.3	GND	GND	GND	4.2	11	11.5	6.3	1.1	2.2	8.5	11.5

βIII X3 MODE

Q	2	3	18	19	20	21	28	29	30	31	32	33	36	47	49	53	54	55	57	67
B	3.2	0	0	0	0	0	0.6	11	0.6	11	0.6	0.6	0.25	11.5	4	0	0	11	0	0.65
C	GND	6.5	0	2.1	0	4.6	0	11.5	0	11.5	0	0	3.9	8.4	GND	0.8	0	11.5	0.1	GND
E	6.5	GND	GND	GND	GND	GND	GND	10	GND	11.5	GND	GND	GND	11.5	4.6	GND	GND	11.5	GND	0

IC1

PIN	1	2	3	4	5	6	7	8	9	10	11	12
VOLTAGE	*	3.4	3.6	5.2	3.0	2.9	5.7	*	2.0	4.4	*	1.2
PIN	13	14	15	16	17	18	19	20	21	22	23	24
VOLTAGE	5.9	12	2.9	2.5	8.6	7.5	*	*	2.1	*	3.7	*

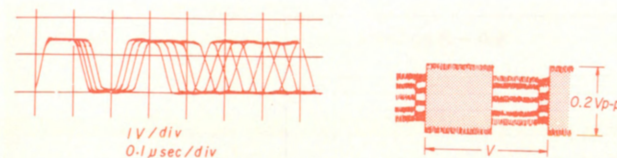
IC2

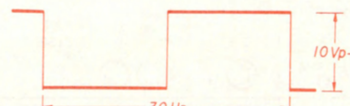
PIN	1	2	3	4	5	6	7	8	9	10	11	12
VOLTAGE	5.6	5.2	5.8	3	0.5	5.8	0	5.8	3.4	2.7	2.8	2.6
PIN	13	14	15	16	17	18	19	20	21	22	23	24
VOLTAGE	4.3	GND	GND	GND	4.2	11.5	11.5	6.3	1.1	2.2	4	11.5

IC4

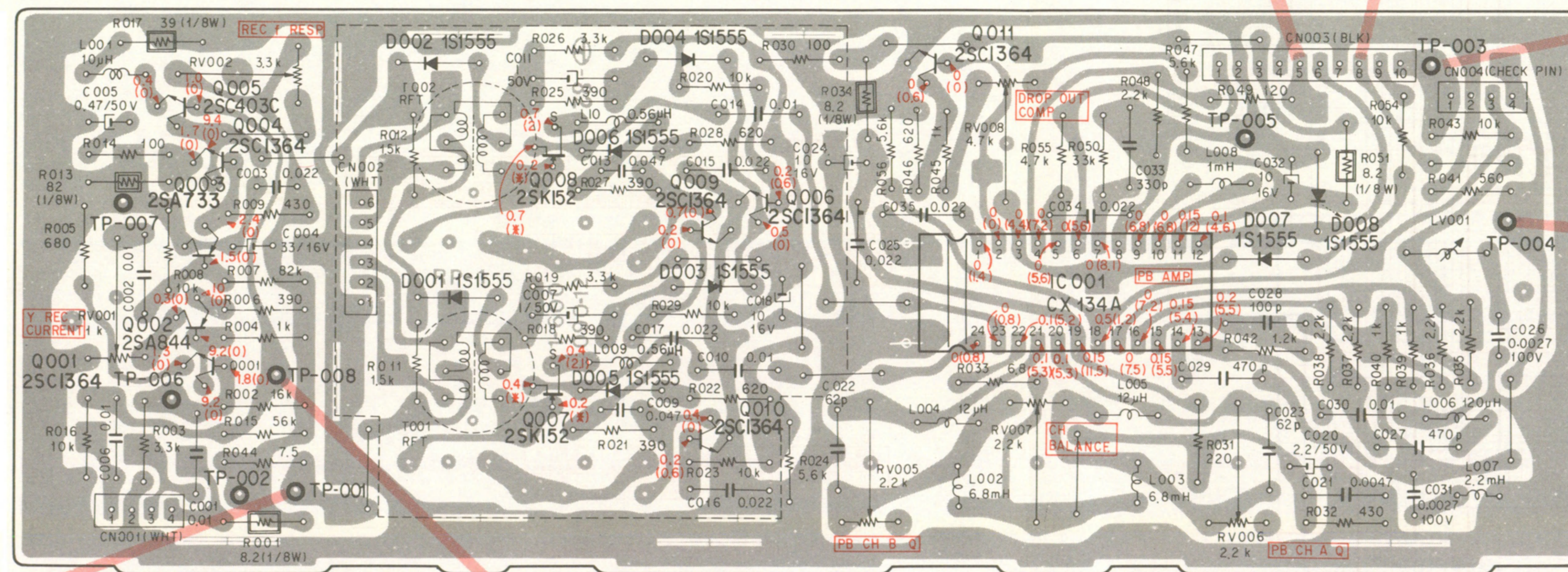
PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14
VOLTAGE	3.9	0	11.5	11.5	0	0	GND	11.5	8.6	2.9	8.1	2.9	11.5	11.5

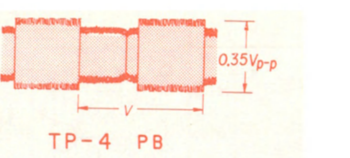
RP-1 (RF RECORD / PLAYBACK AMPLIFIER) PRINTED WIRING BOARD
—REF. No. 5000 series—

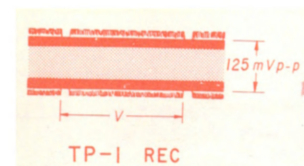


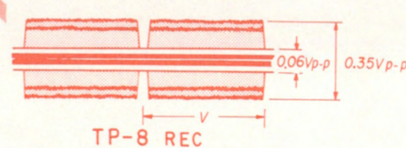


Q,IC	005 002 003 004 001 008 007 009 010 006 011 IC001
D	002 001 006 005 004 003 007 008
ADJ	RV001 RV002 RV005 RV008 RV007 RV006 LV001
TP	007 006 008 002 001 005 003 004









CN5001 (WHT)

4	BRN	REC P̄ 12V IN
3		REC Y RF IN (X)
2	WHT	REC Y RF IN (Y)
1	RED	REC C RF IN

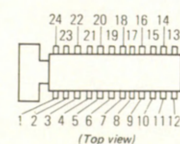
CN5002 (WHT)

6	WHT	VIDEO HEAD B (X)
5	RED	VIDEO HEAD B (Y)
4	RED	VIDEO HEAD B (G)
3	WHT	VIDEO HEAD A (X)
2	RED	VIDEO HEAD A (Y)
1	WHT	VIDEO HEAD A (G)

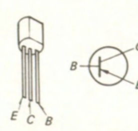
CN5003 (BLK)

10	BRN	RF SW. P. IN
9	RED	M.C SIG IN
8		PB. C RF OUT (X)
7	WHT	PB. C RF OUT (Y)
6	ORG	ACK SIG IN
5		PB. Y RF OUT (X)
4	RED	PB. Y RF OUT (Y)
3	YEL	PB/DUB 12V IN
2	BLK	DOC RF IN (Y)
1		DOC RF IN (X)

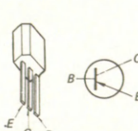
CX134A



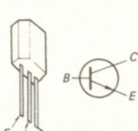
2SA733



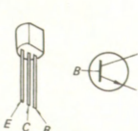
2SA844



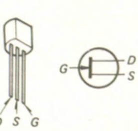
2SC403C



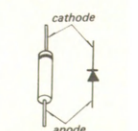
2SC1364



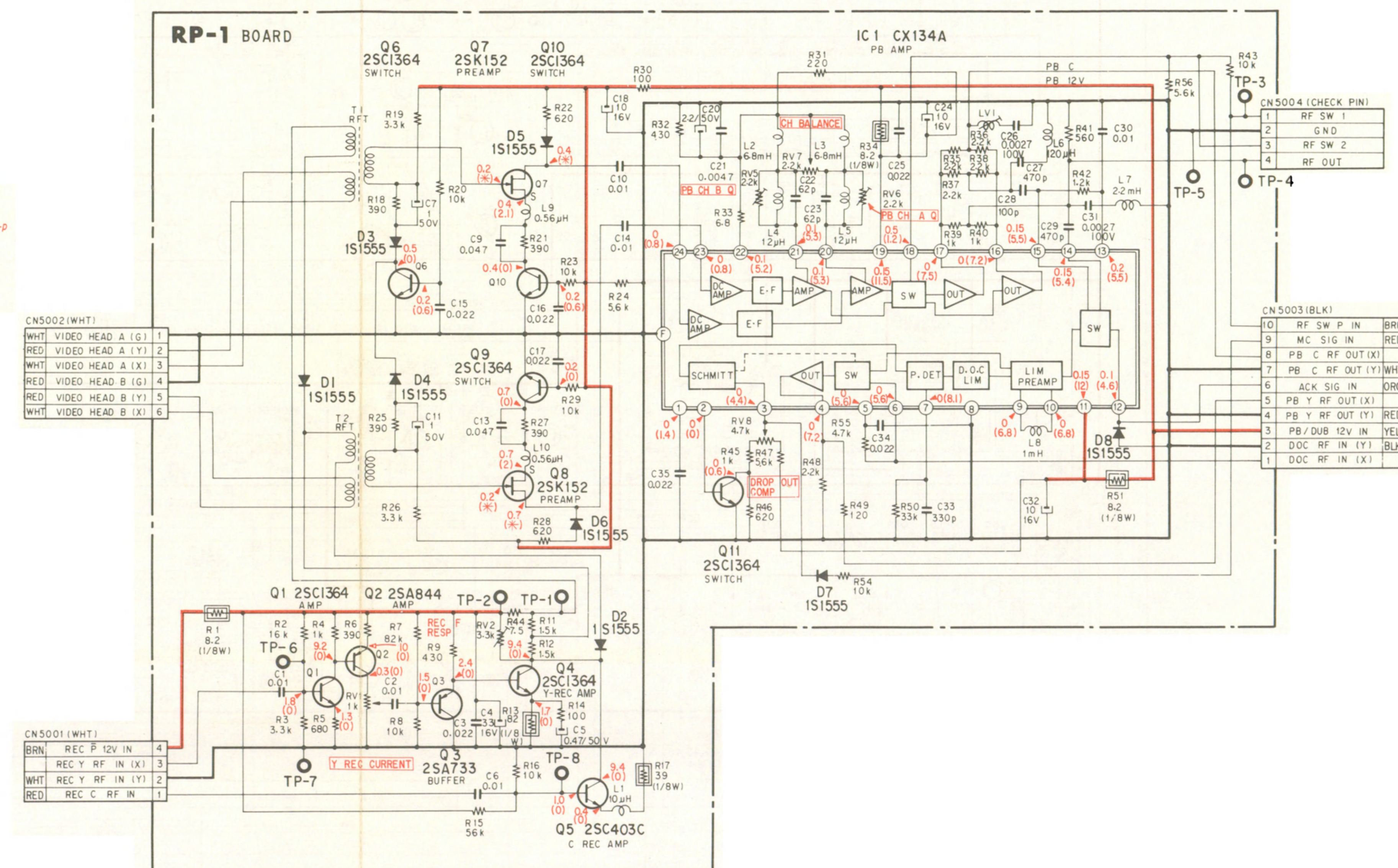
2SK152



1S1555



RP-1 (RF RECORD / PLAYBACK AMPLIFIER) BOARD SCHEMATIC DIAGRAM
—REF. No. 5000 series—



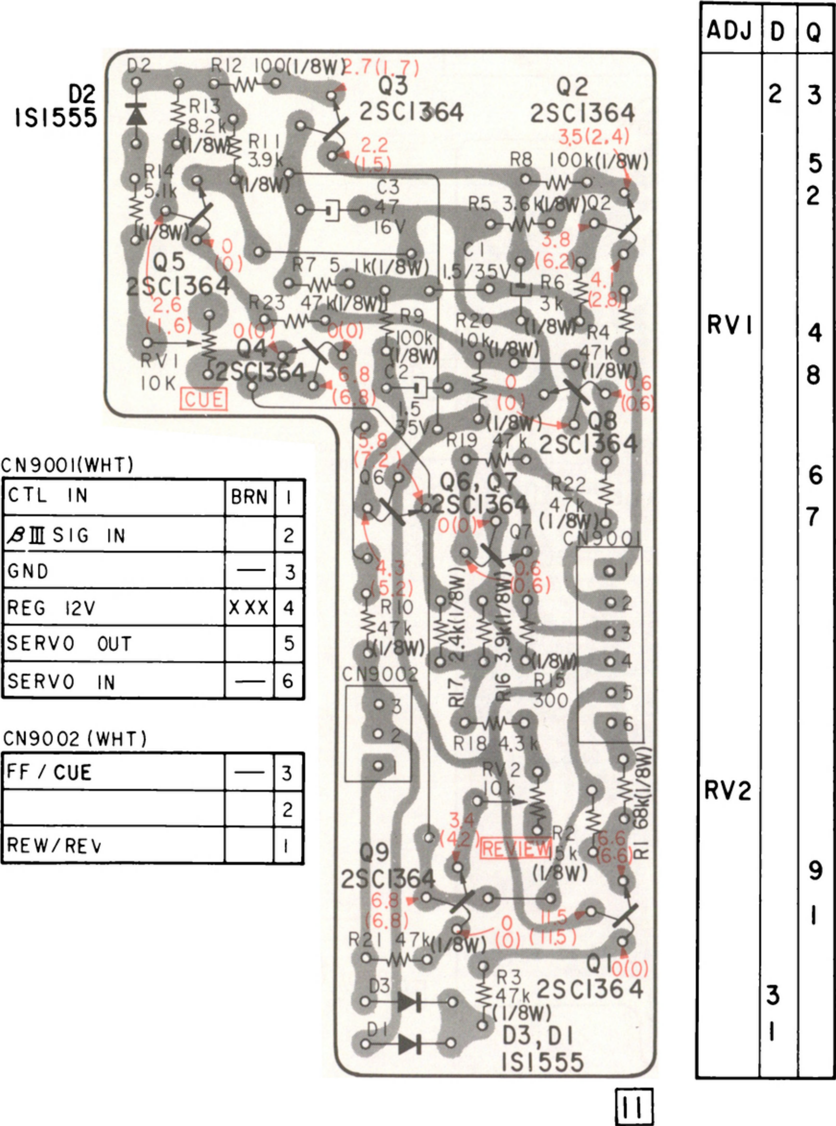
NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ): βIII PB mode
  no mark: βIII REC mode
- Marked * is not able to measure the voltage of it's position.

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

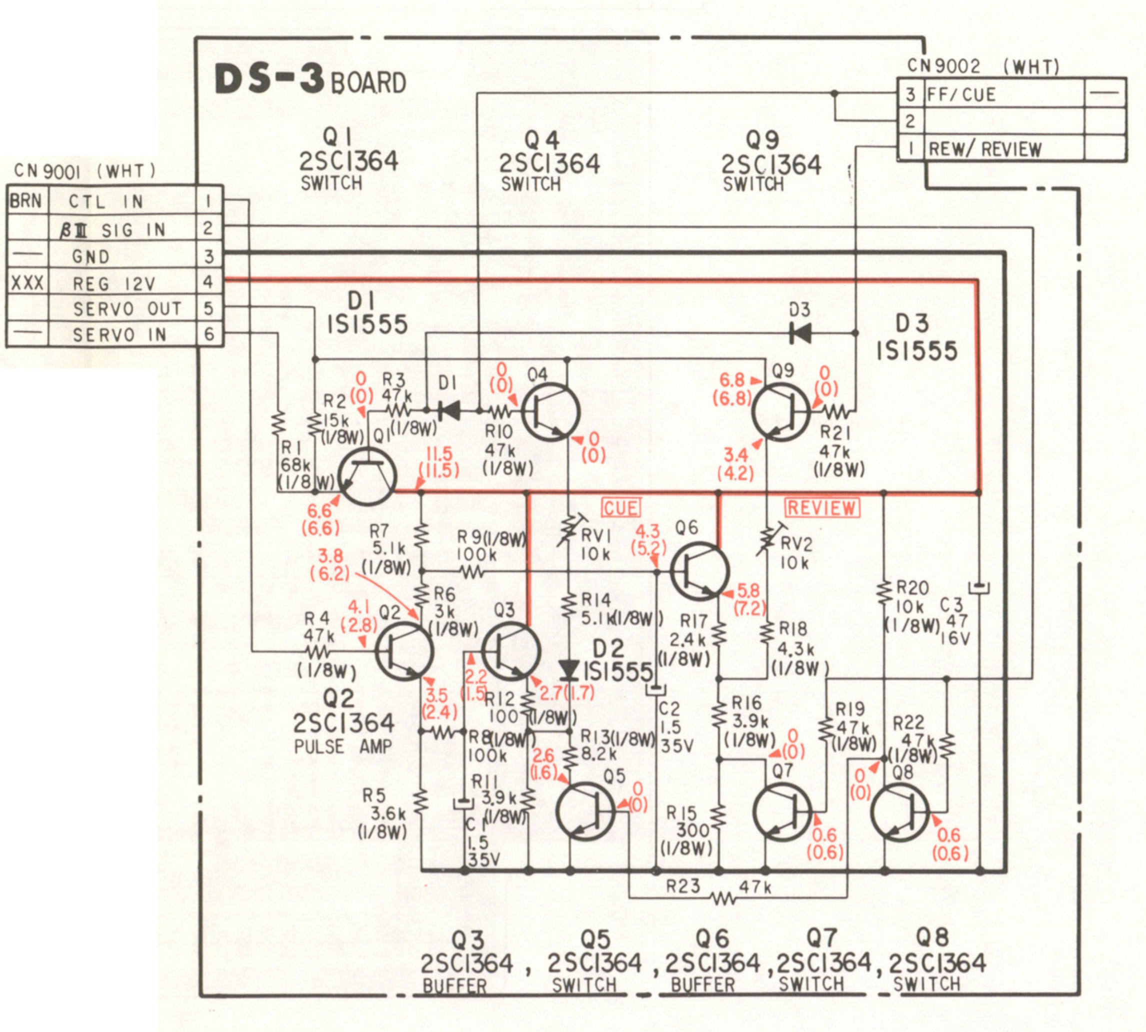
DS-3 (BETASCAN, DRUM SPEED CONTROL) PRINTED WIRING BOARD

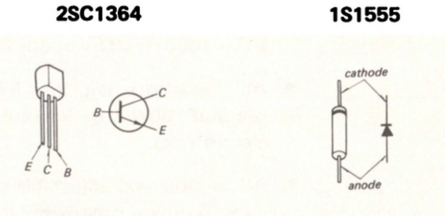
—REF. No. 9400 series—



DS-3 (BETASCAN, DRUM SPEED CONTROL) BOARD SCHEMATIC DIAGRAM

—REF. No. 9400 series—





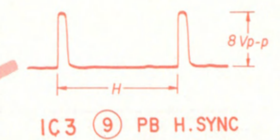
NOTES:

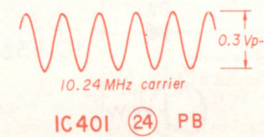
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ): βIII PB mode
  no mark: βIII REC mode

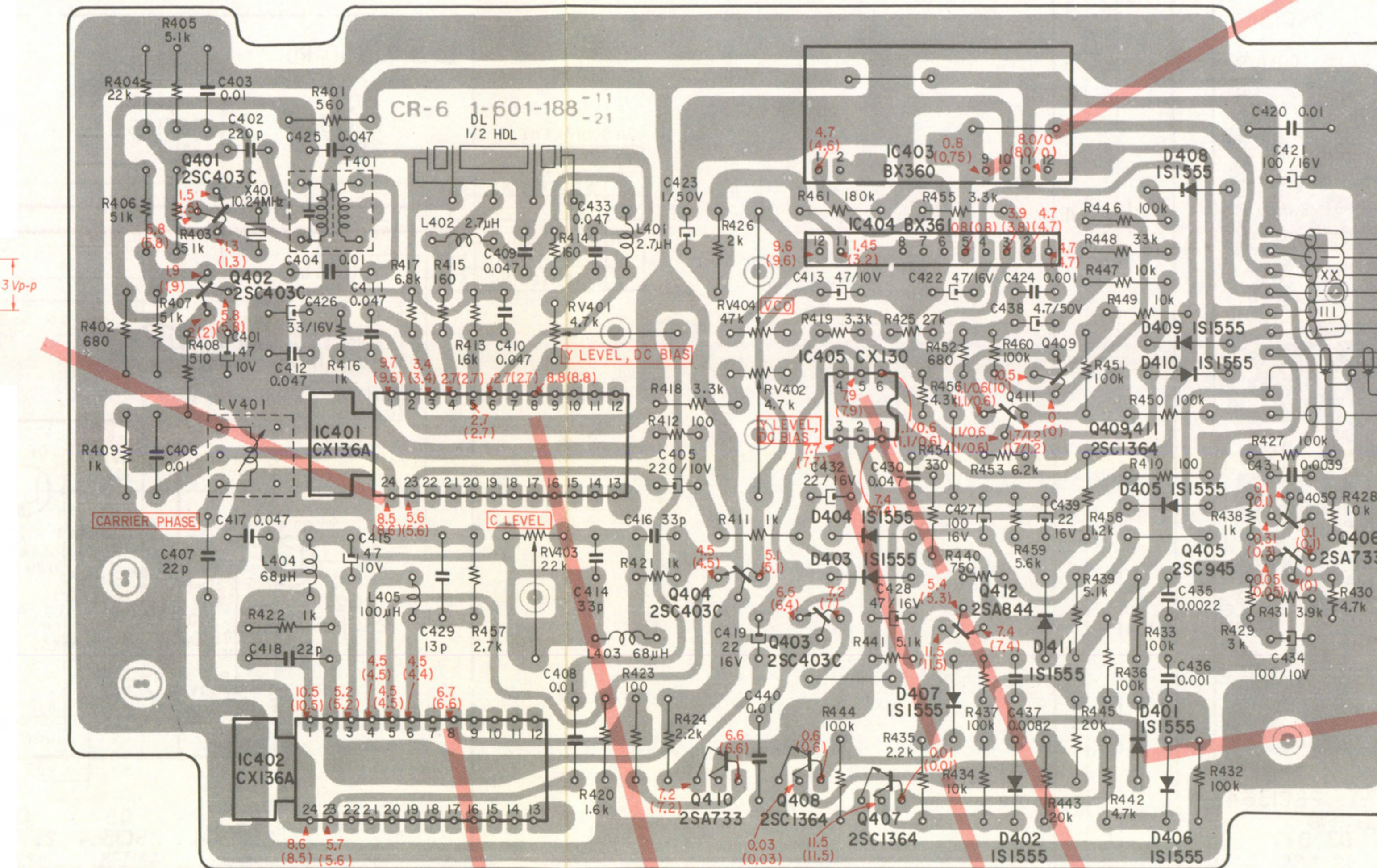
CR-6 (BETASCAN-CUE/REVIEW–) PRINTED WIRING BOARD

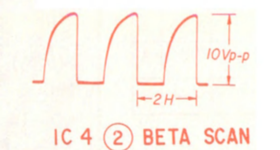
–REF. No. 1400 series–

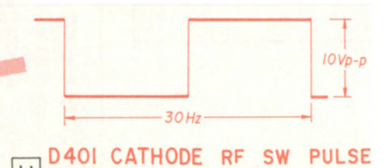
Q,IC	401 402, IC402, IC401, 404 410, 403 408, IC405 407, IC403 IC404, 411 412, 409, 405 406
D	404, 403, 407, 402, 411, 401, 406, 408, 409, 410, 405
ADJ	LV401, RV403, RV401, RV404, RV402









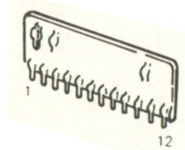


IC402 (8) PB (2.5 Vp-p, H)

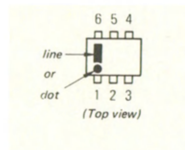
IC401 (8) PB (0.8 Vp-p, H)

IC405 (3)(5) PB (2.5 Vp-p, H)

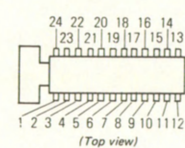
BX360
BX361



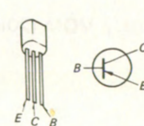
CX130



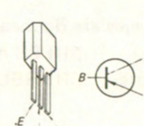
CX136A



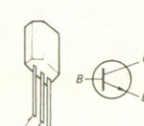
2SA733



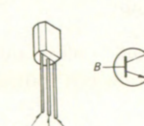
2SA844



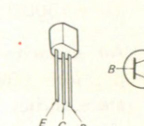
2SC403C



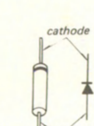
2SC945



2SC1364



1S1555



NOTES:

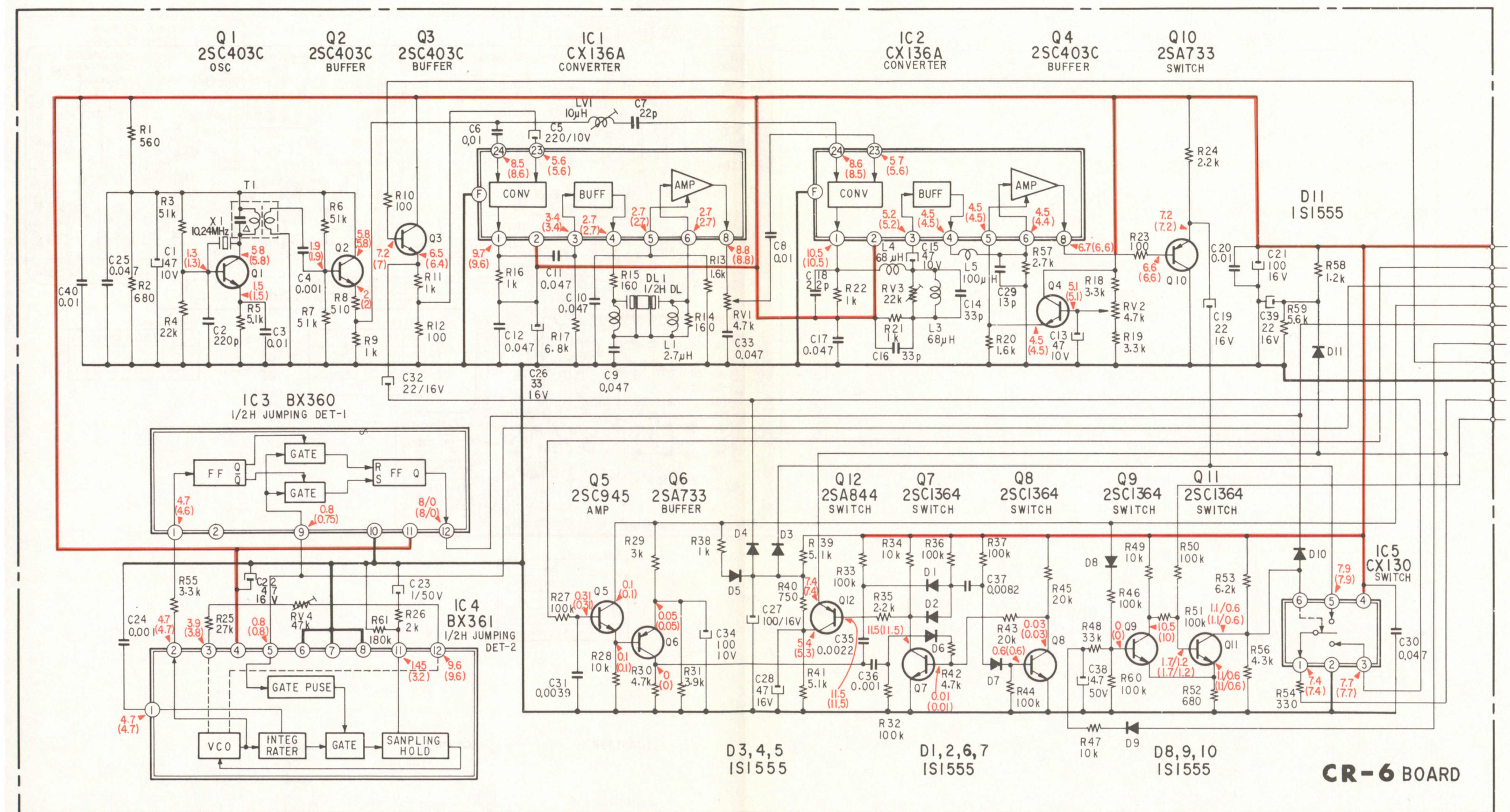
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000 Ω; MΩ = 1000 kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- [resistor symbol] : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ): βIII PB mode
  no mark: βIII REC mode

CR-6 (BETASCAN-CUE/REVIEW-) BOARD SCHEMATIC DIAGRAM

—REF. No. 1400 series—

CUE/REV MODE

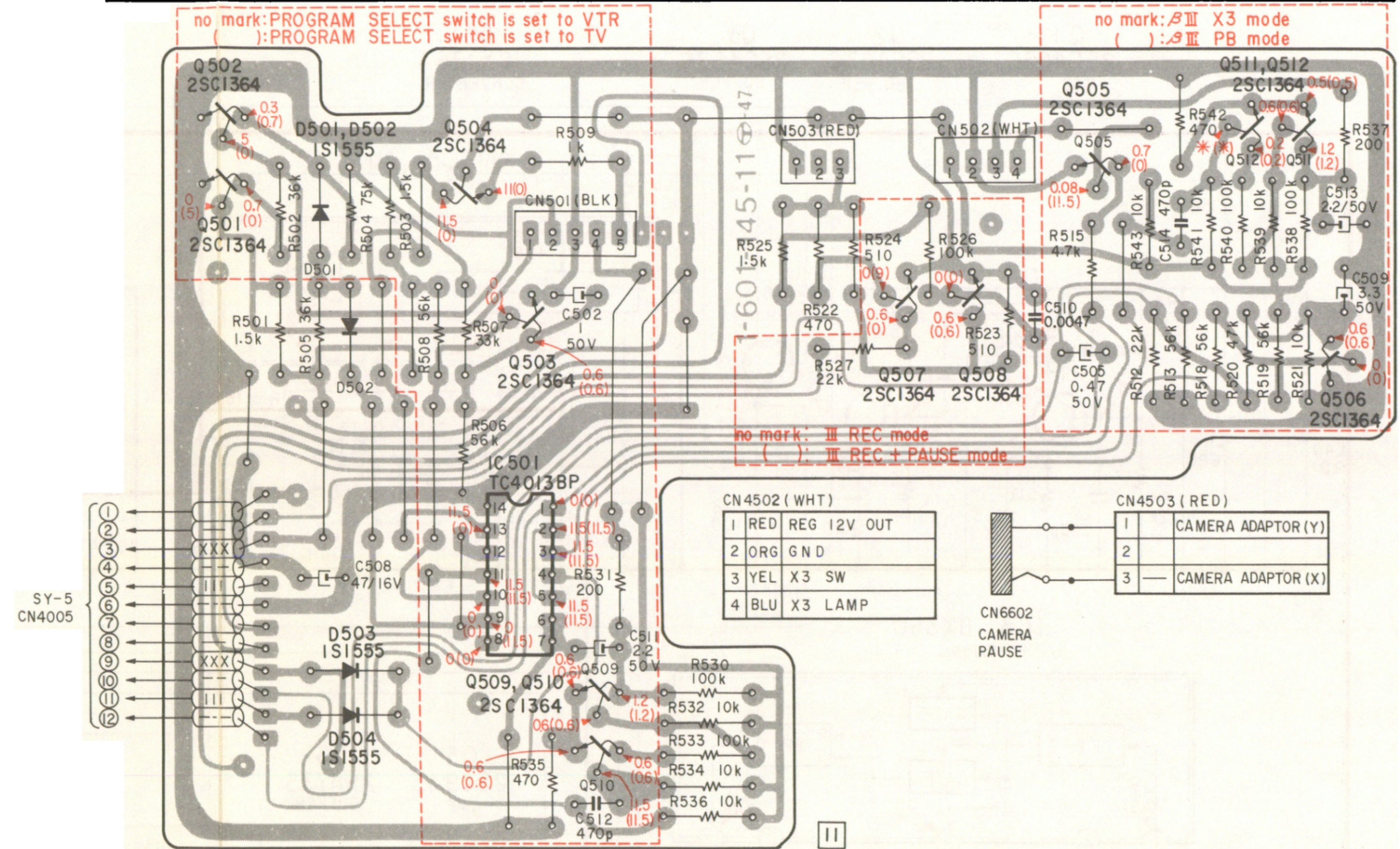
Q	B	C	E
5	3.4	11.5	6.9
6	6.9	2.6	5.2
8	0.6	0.13	GND
9	1.4	0.9	0.8
11	0.2	4.5	0.8
12	11.5	8.1	8.9



SY-6 (SYSTEM CONTROL) **PRINTED WIRING BOARD**

–REF. No. 4500 series–

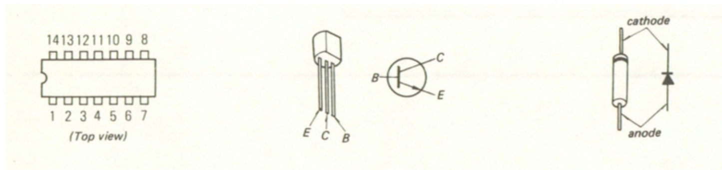
Q, IC	502 501	504	503 IC501	509 510	507	508	505	512	511 506
D	501 502	503 504							



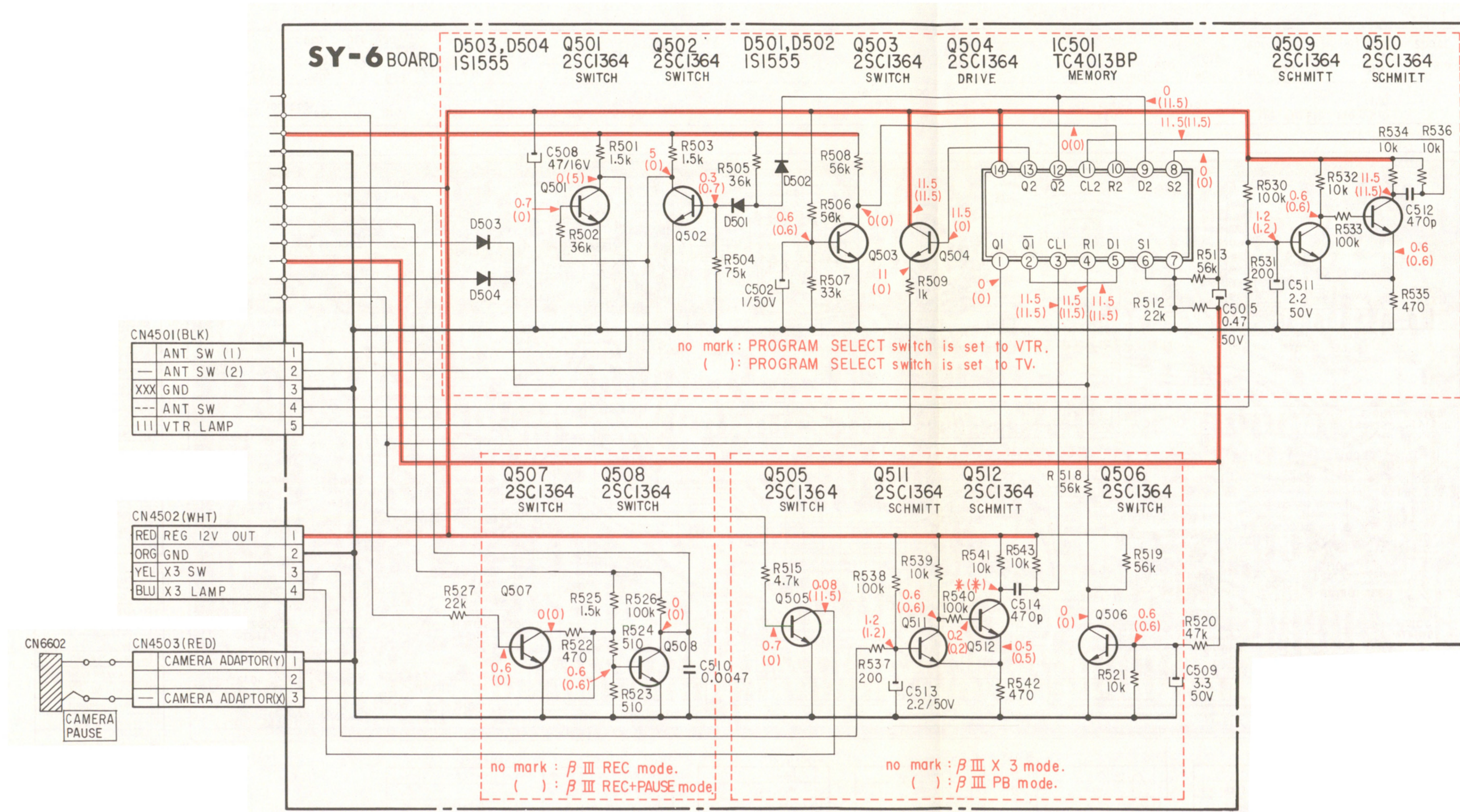
CN4501 (BLK)

1		ANT SW (1)
2	—	ANT SW (2)
3	XXX	GND
4	---	ANT SW
5	III	VTR LAMP

TC4013BP **2SC1364** **1S1555**



SY-6 (SYSTEM CONTROL) BOARD SCHEMATIC DIAGRAM
—REF. No. 4500 series—



NOTES:

- All capacitors are in μF unless otherwise noted. PF = μμF.
- All resistors are in ohms, 1/4W unless otherwise noted. K = 1000, M = 1000K
- —[W]— indicates a nonflammable resistor.
- Readings are taken under contions except readings around the Q507 and R508.
  - no mark: PICTURE SOURCE switch is set to TAPE.
  - ( ): PICTURE SOURCE switch is set to TV.
- Readings around the Q507 and Q508 are taken under conditions.
  - no mark: β III REC mode
  - ( ): β III REC + PAUSE
  - (Recording signal is a color-bar signal.)
- The red lines show the B+ voltages.

SY-5 (SYSTEM CONTROL) PRINTED WIRING BOARD
—REF. No. 4000 series—

Q, IC	035 IC002 015 016 017 013 014 012 011 IC003 009 008 010 006 005 003 004 007 IC001 033 020 018 034 IC004 038 019 037 036 030 029 024 021 025 027 028 026 022 001 031 023 002 032
D	029 026 027 028 025 031 015 014 013 012 011 030 009 022 023 034 024 007 036 008 010 033 005 006 016 017 032 020 035 019 018 004 003 001 021 002

8Vp-p
400kHz
IC1 (42)

2Vp-p
215kHz
IC2 (7) REW

TAPE COUNTER
MEMORY
S9503

CN4008 (BLK)

COUNTER SW (X)	BRN	1
COUNTER SW (Y)	BRN	2
MEMORY SW (X)	RED	3
MEMORY SW (Y)	RED	4

SY-5
1-601-144

CN4010 (BLK) — L9502 REW SENSOR

1		REW SENSOR (X)
2		
3	—	REW SENSOR (Y)

CN4009 (WHT)

1	XXX	DRUM SERVO
2	—	GND
3		SYS 12V

CN4006 (WHT)

1	BRN	REC 12V OUT
2	RED	PAUSE
3	ORG	TIMER 10V IN
4	YEL	REG 12V IN
5	BLU	POWER OFF SIG IN
6	VIO	GND
7	BLK	GND
8		
9	BLK	SYS 12V
10	GRY	SYS 12V

CN4002 (WHT)

1		SYS 12V
2	—	PAUSE
3	XXX	CUE
4	---	REVIEW
5	III	PAUSE LAMP
6		

CN4005 (RED)

1		PAUSE LAMP OUT
2	—	CAMERA CONT(1) OUT
3	XXX	TIMER 10V OUT
4	---	GND
5	III	
6	—·—	REG 12V OUT
7		CAMERA CONT(2) IN
8	—	FWD OUT
9	XXX	REC/DUB OUT
10	---	PB/DUB OUT
11	III	ØI SIG OUT
12	—·—	X3 SIG IN

11

CN4012 (WHT) — SL 9506 BRAKE SOLENOID

1		SYS 12V
2		
3	—	BRAKE PL

CN4003 (WHT)

1		SYS 12V
2	—	FWD PL START
3	XXX	FWD PL HOLD
4	---	FF/CUE.PL START
5	III	FF/CUE.PL HOLD
6		REW/REV PL START
7	—	REW/REV PL HOLD
8	XXX	STOP. PL START
9	---	STOP. PL HOLD
10		

CN4011 (BLK) — SL 9507 SELECT SOLENOID

1		SYS 12V
2		
3	—	SELECT. PL

CN4001 (BLK)

1		REG 12V OUT
2	—	FF/CUE
3	XXX	FWD
4	---	REW/REVIEW
5		EJECT
6	—	PAUSE
7	XXX	GND
8		

CN4004 (BLK)

1		GND
2	—	REVERSE
3	XXX	SYS 12V
4	---	CAPSTAN SERVO
5	III	SYS 12V
6	—·—	FWD SENSOR
7		THREADING END SW (NC)
8	—	SLACK SENSOR
9	XXX	REG 12V OUT
10	---	CASSETTE IN SW
11	III	PINCH. PL. HOLD
12	—·—	PINCH. PL. START

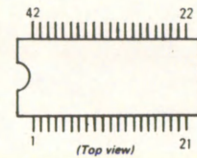
CN4007 (WHT)

1	BRN	CAPSTAN CONT OUT
2	RED	CAPSTAN ERROR IN
3	ORG	X3 SIG OUT
4	YEL	THREADING OUT
5	BLU	DRUM CONT OUT
6	VIO	DRUM ERROR IN
7	GRY	FF/REW OUT
8	WHT	PINCH ROLLER SIG OUT
9	BRN	ØI SIG IN
10	RED	PB +DUB 12V IN
11	ORG	REC/DUB IN
12	YEL	FWD/REC

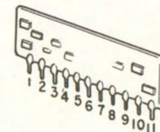
CN4013 (RED)

1	—	FF/CUE
2		
3		REW/REVIEW

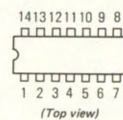
µPD546C037



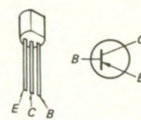
BX342



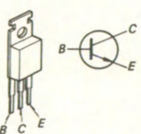
TC4001BP



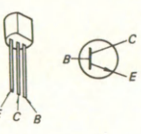
2SA733
2SA733P



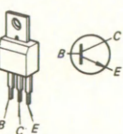
2SC1061
2SC1061C



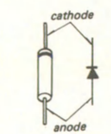
2SC1364
2SC1474



2SC1761



1S1555
10E2
RD7.5EB
RD12EB
RD13EB



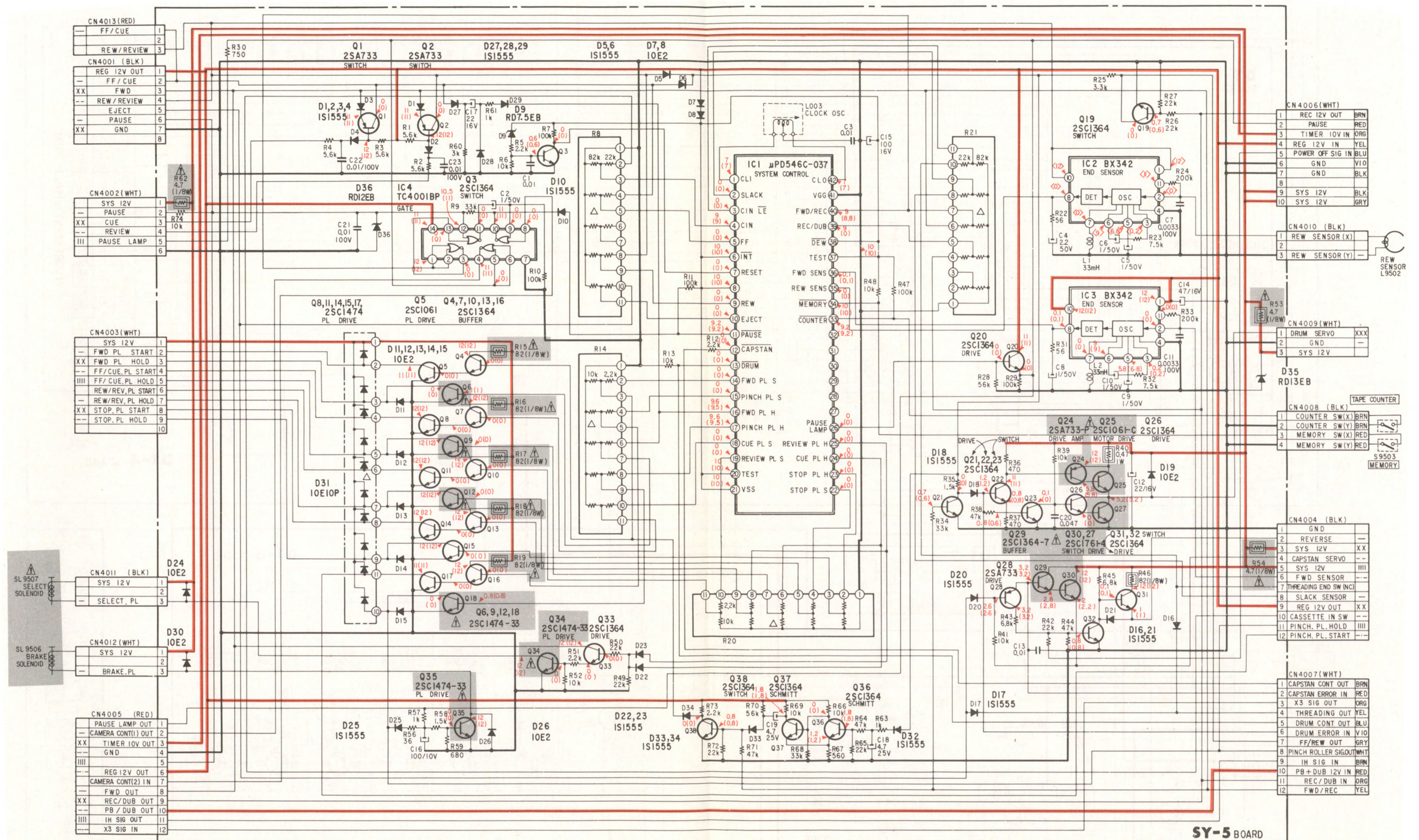
NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in µF unless otherwise noted. p : µµF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- —WW— : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ) : βIII PB mode
  ⟨ ⟩ : REW mode
  no mark : βIII REC mode

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

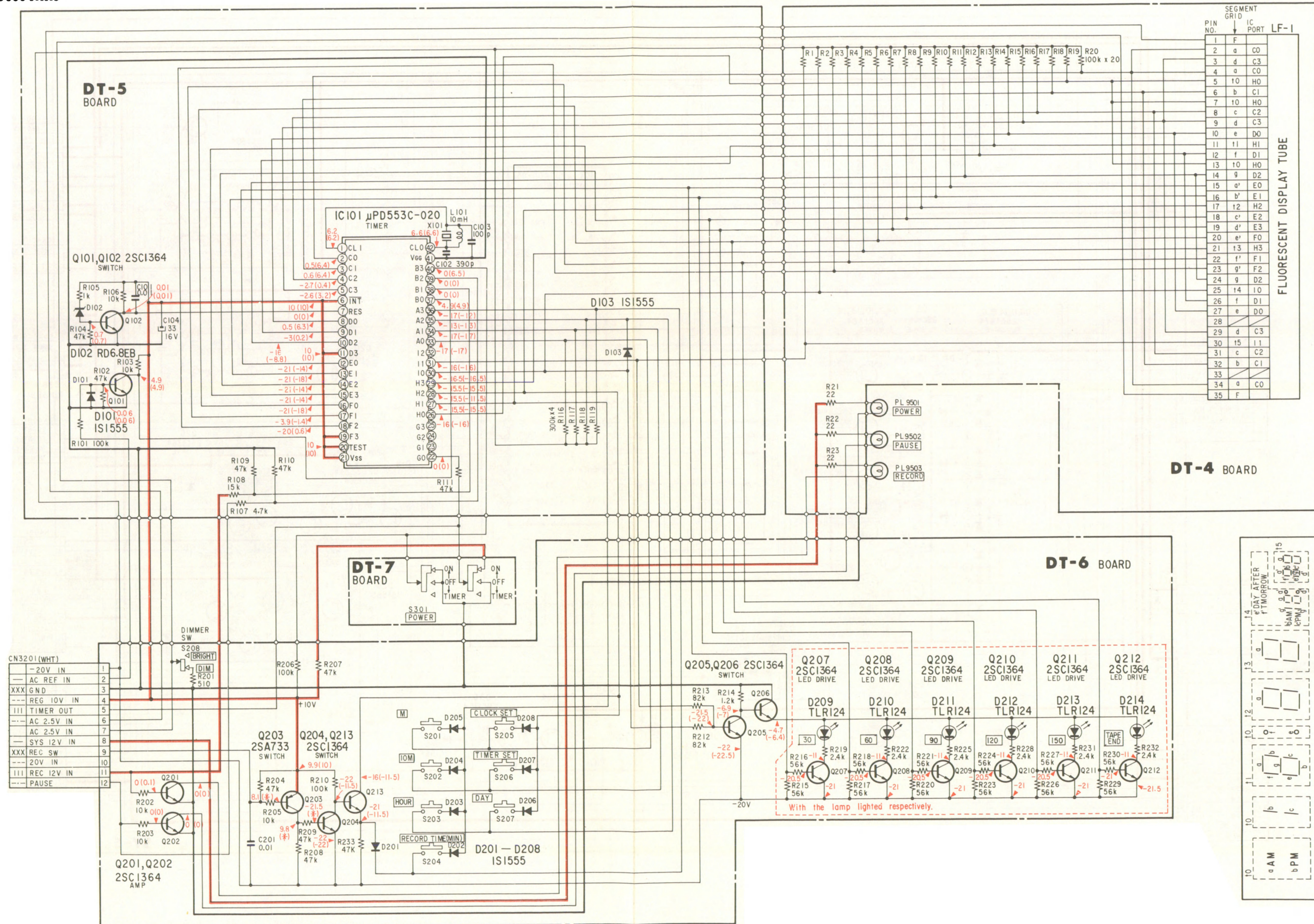
SY-5 (SYSTEM CONTROL) BOARD SCHEMATIC DIAGRAM

—REF. No. 4000 series—



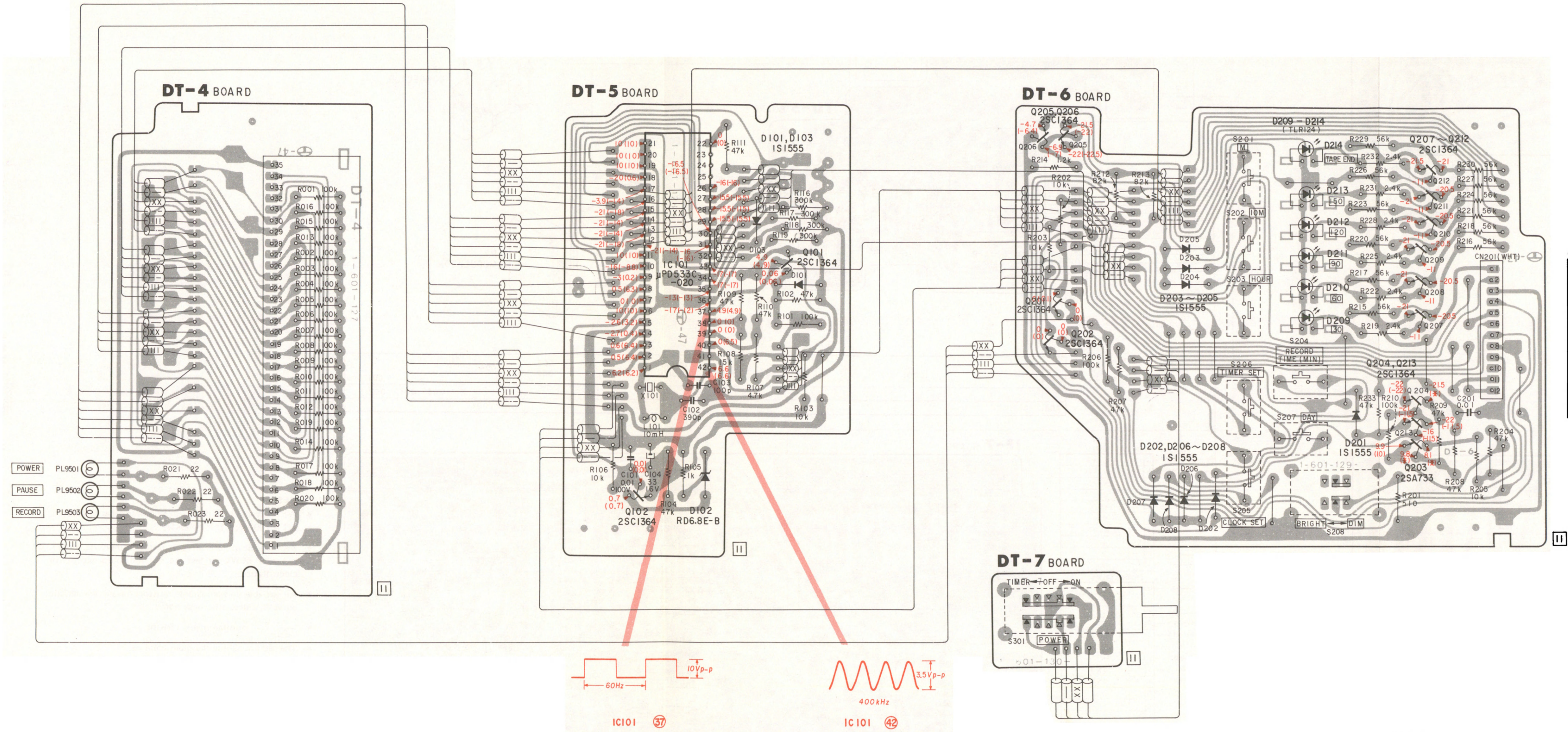
DT-4, DT-5, DT-6 AND DT-7 (PROGRAM TIMER) BOARDS SCHEMATIC DIAGRAM

—REF. No. 3000 series—



DT-4, DT-5, DT-6 AND DT-7 (PROGRAM TIMER) **PRINTED WIRING BOARDS**

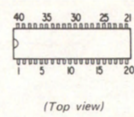
–REF. No. 3000 series–



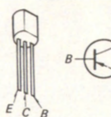
CN3201 (WHT)		
1		–20V IN
2	—	AC REF IN
3	XXX	GND
4	---	REG 10V IN
5	III	TIMER OUT
6	-·-	AC 2.5V IN
7		AC 2.5V IN
8	—	SYS 12V IN
9	XXX	REC SW
10	---	20V IN
11	III	REC 12V IN
12	---	PAUSE

– 23
+9,90
– 11.7
3,00V

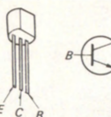
μPD553C020



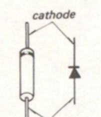
2SA733



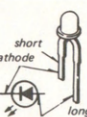
2SC1364



1S1555
RD6.8EB



TLR124



NOTES:

- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
  ( ) : With time reserved
  no mark : E-E mode (CLOCK TIME INDICATOR AM12:00)

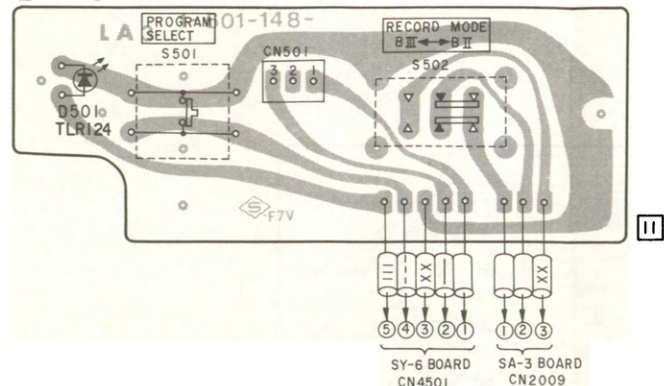
LA-3 (LAMP, SWITCH), IF-7 (VHF, SIF, AFT, DC-CONVERTOR), TU-5 (AGC, BAND SELECT) AND TS-4 (CHANNEL PRESET, CHANNEL SELECTOR) PRINTED WIRING BOARDS

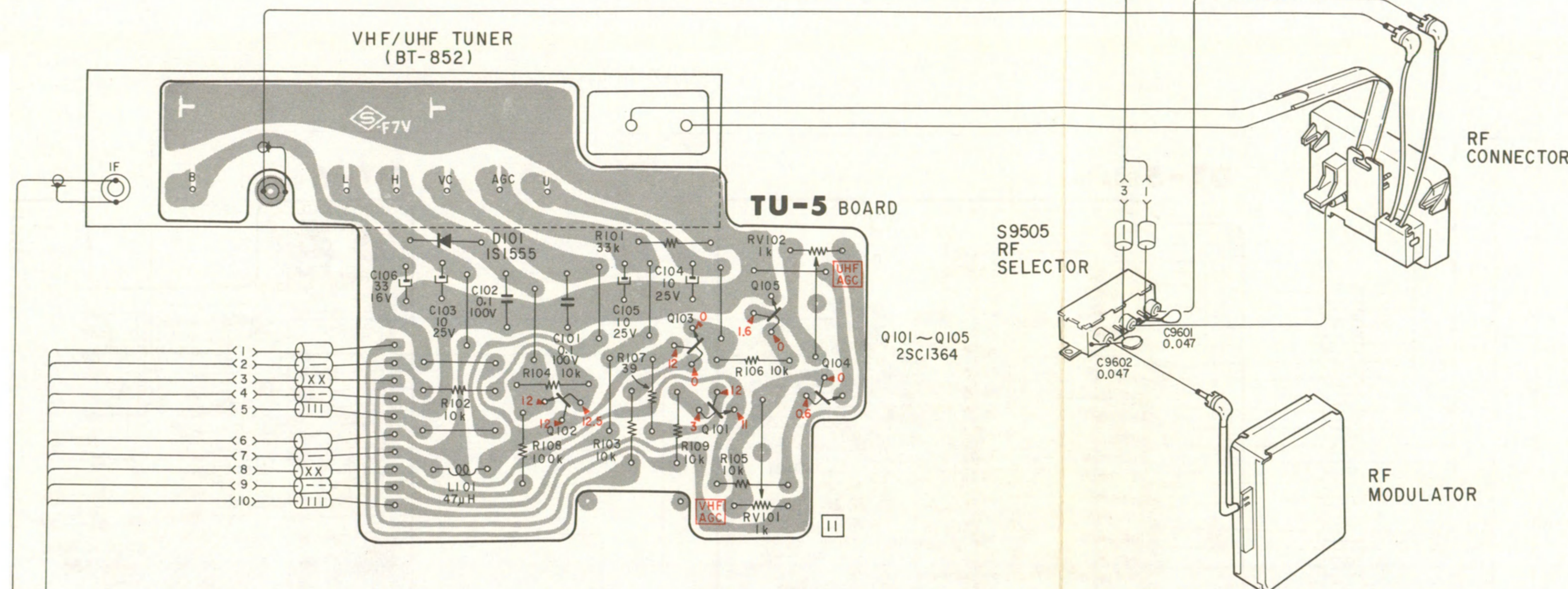
– REF. No. LA-3 BOARD: 2500 series IF-7 BOARD: 7000 series
TU-5 BOARD: 8100 series TS-4 BOARD: 8300 series –

CN2501 (WHT)

1		ANT SW (1)
2		
3	—	ANT SW (2)

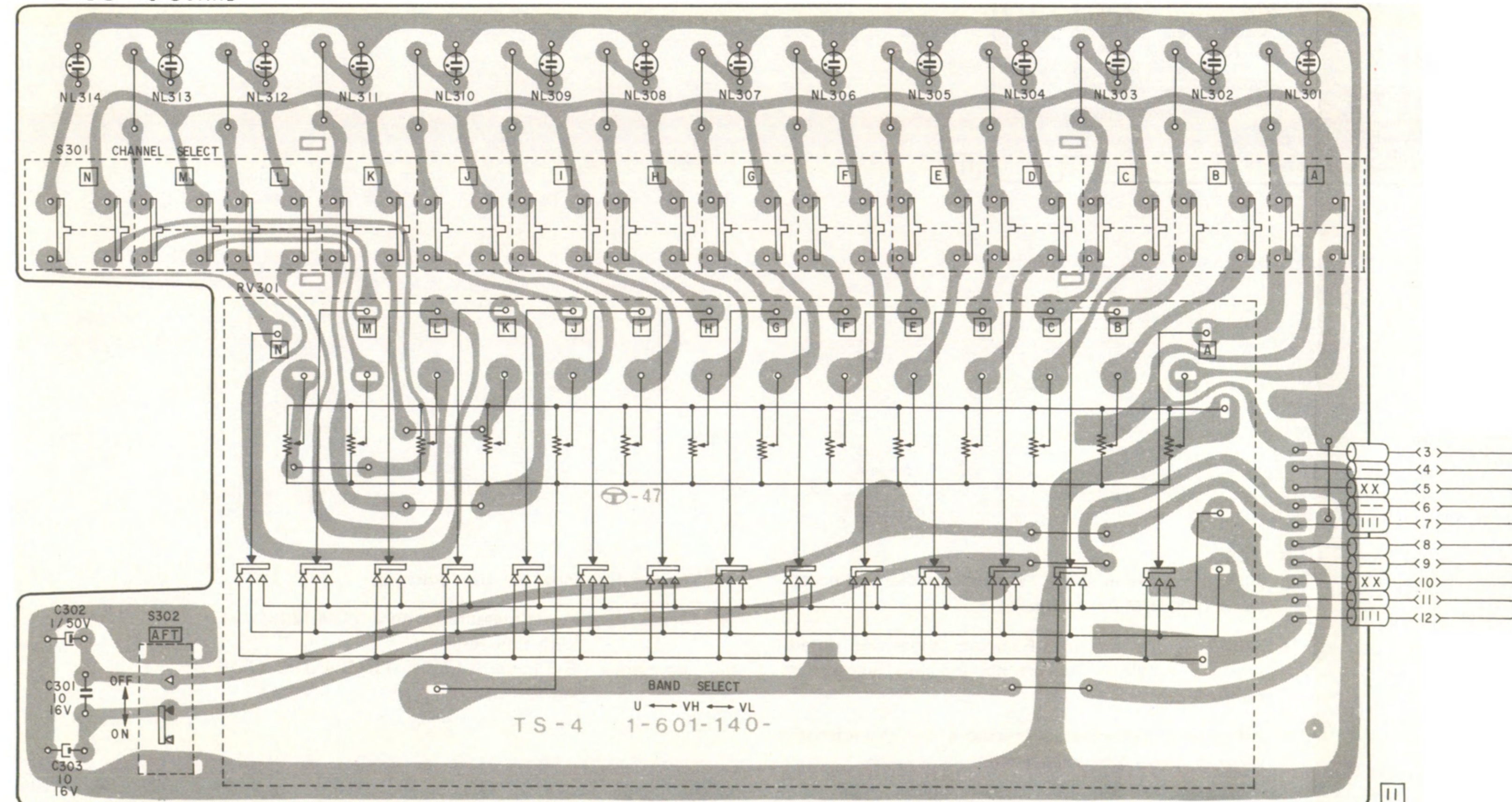
LA-3 BOARD





IC,Q	IC001 IC003 IC002 003 002 004 006 005 001
D	003 001 002
ADJ	RV001

TS-4 BOARD



CN7001 (WHT)

10	III	UV +B
9	--	Tu AGC
8	XX	V_H
7	—	12V
6		V_L
5	III	V_c
4	--	GND
3	XX	L
2	—	H
1		U

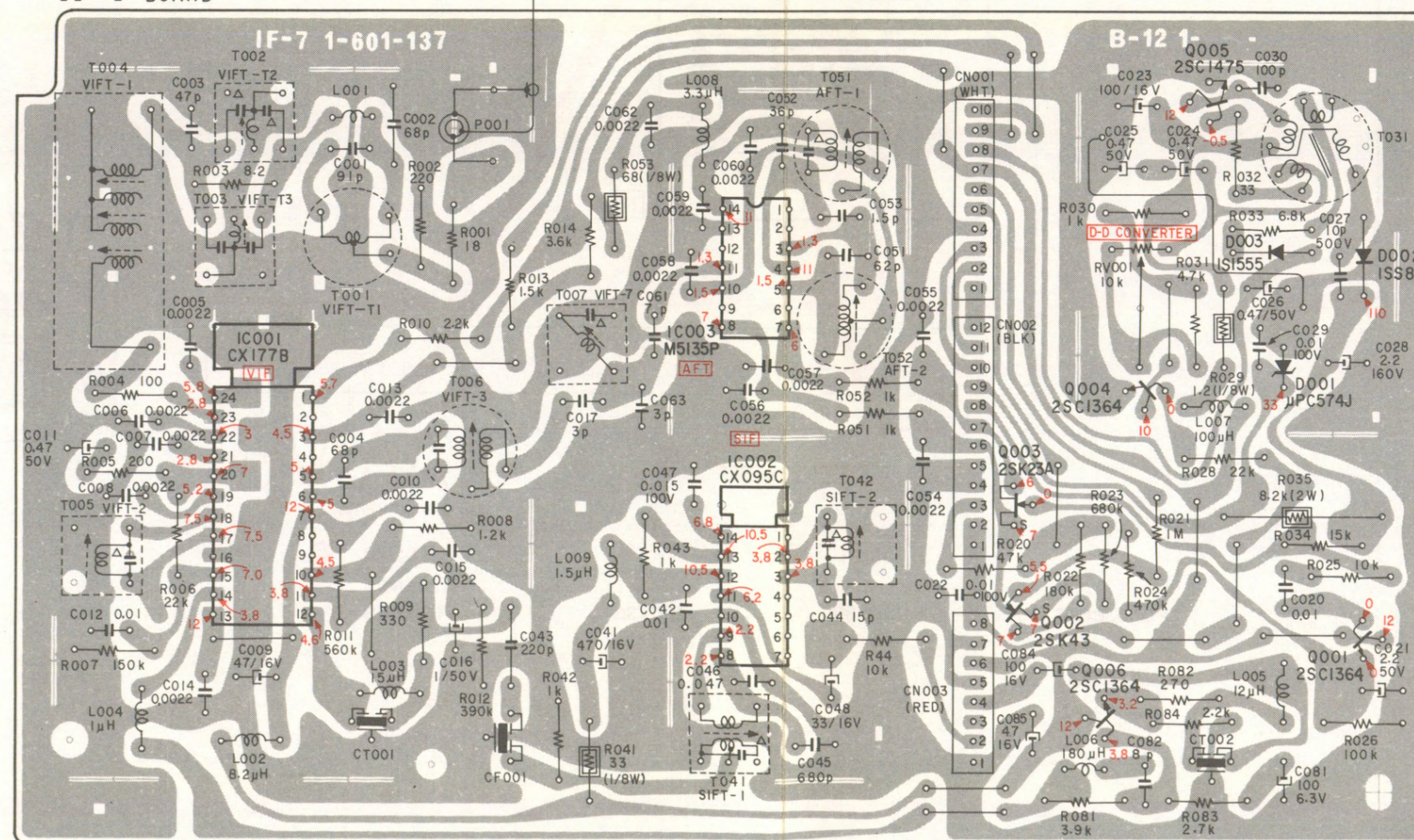
CN7002 (BLK)

12	---	U
11	III	H
10	--	L
9	XX	33V
8	—	NEON
7		AFT-7
6	--	AFT-8
5	XX	GND
4	—	GND
3		V_c
2		
1		

CN7003 (RED)

8	BLU	TUNER MUTE IN
7	YEL	GND
6	ORG	REG 12V IN
5	RED	VIDEO OUT (Y)
4		VIDEO OUT (X)
3	BLK	AUDIO OUT (Y)
2		AUDIO OUT (X)
1		

IF-7 BOARD

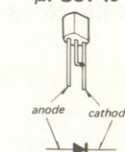


NOTES:

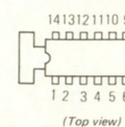
- All resistors are in ohms, ¼ W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- [resistor symbol] : nonflammable resistor.
- The red lines show the main voltages.
- All voltages are dc measured with a VOM (20kΩ/V).
- Readings are taken with E-E mode.

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

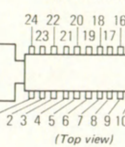
μPC574J



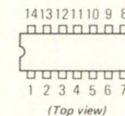
CX095C



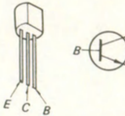
CX177B



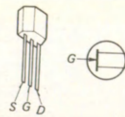
M5135P



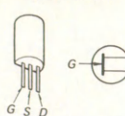
2SC1363
2SC1364
2SC1475



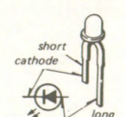
2SK23A



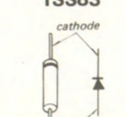
2SK43



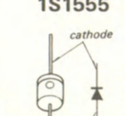
TLR124
TLY124



1SS83

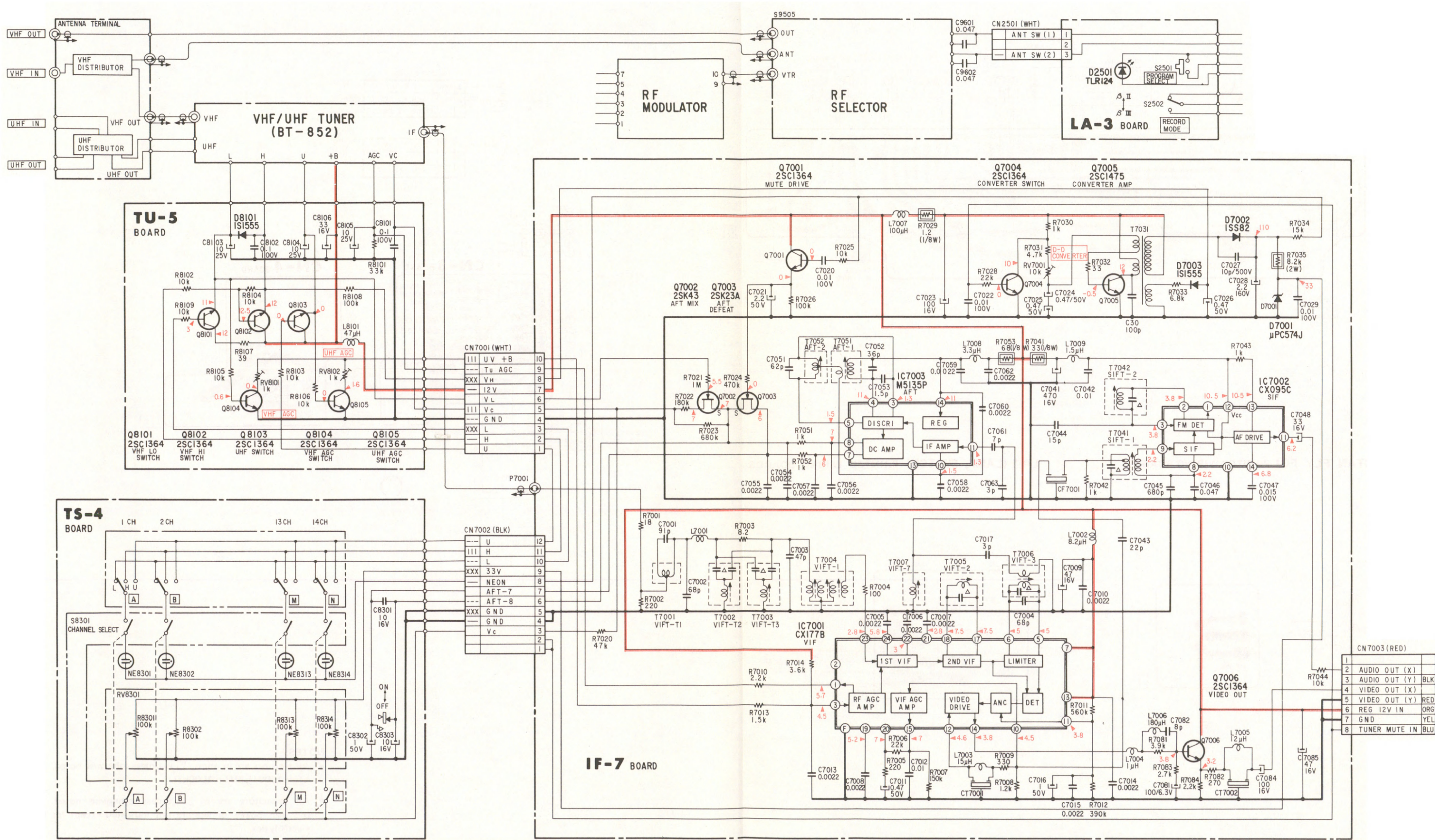


1S1555

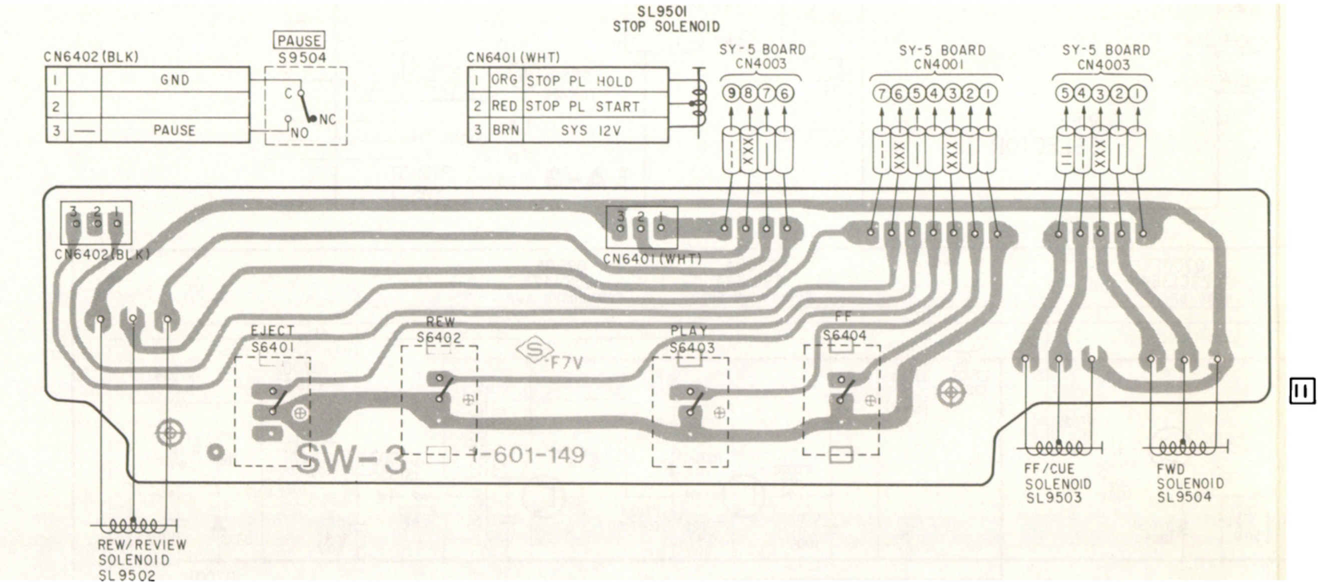


LA-3 (LAMP, SWITCH) BOARD, IF-7 (VIF, SIF, AFT, DC-CONVERTER) BOARD, TU-5 (AGC, BAND SELECTOR) BOARD AND TS-4 (CHANNEL PRESET, CHANNEL SELECTOR) BOARD SCHEMATIC DIAGRAM

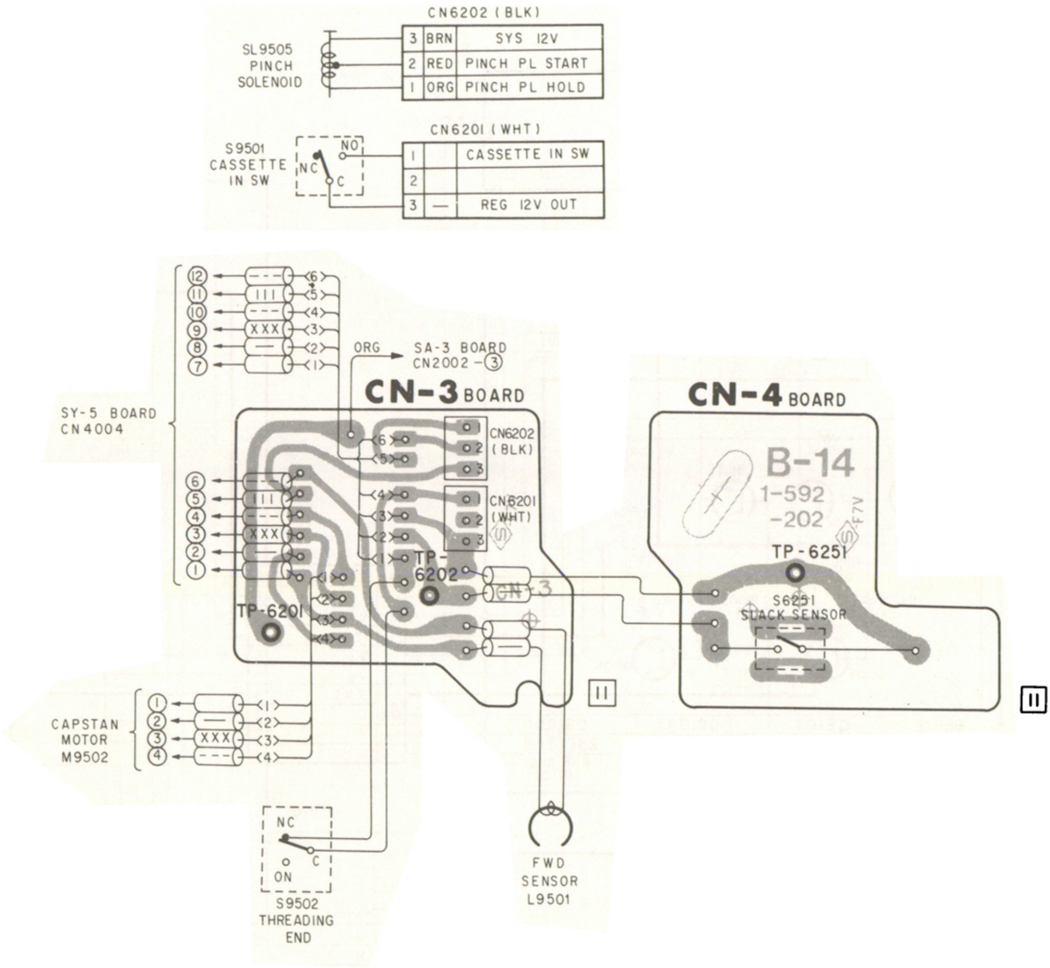
– REF. No. LA-3 BOARD: 2500 series IF-7 BOARD: 7000 series TU-5 BOARD: 8100 series TS-4 BOARD: 8300 series –



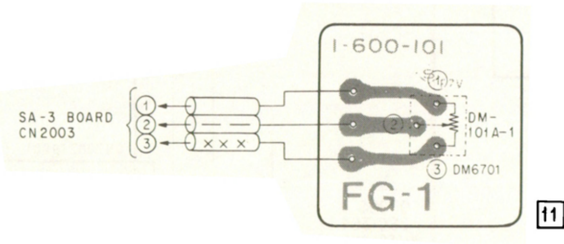
SW-3 (SWITCH, RELAY) PRINTED WIRING BOARD



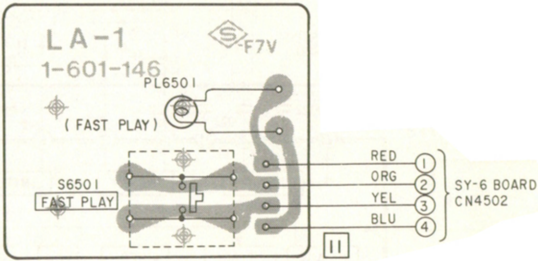
CN-3, CN-4 (RELAY) PRINTED WIRING BOARD



FG-1 (CAPSTAN FLY FG) PRINTED WIRING BOARD



LA-1 (LAMP, SWITCH) PRINTED WIRING BOARDS



NOTES:

- All resistors are in ohms, 1/4 W unless otherwise noted. kΩ = 1000Ω; MΩ = 1000kΩ
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

SECTION 4
EXPLODED VIEWS

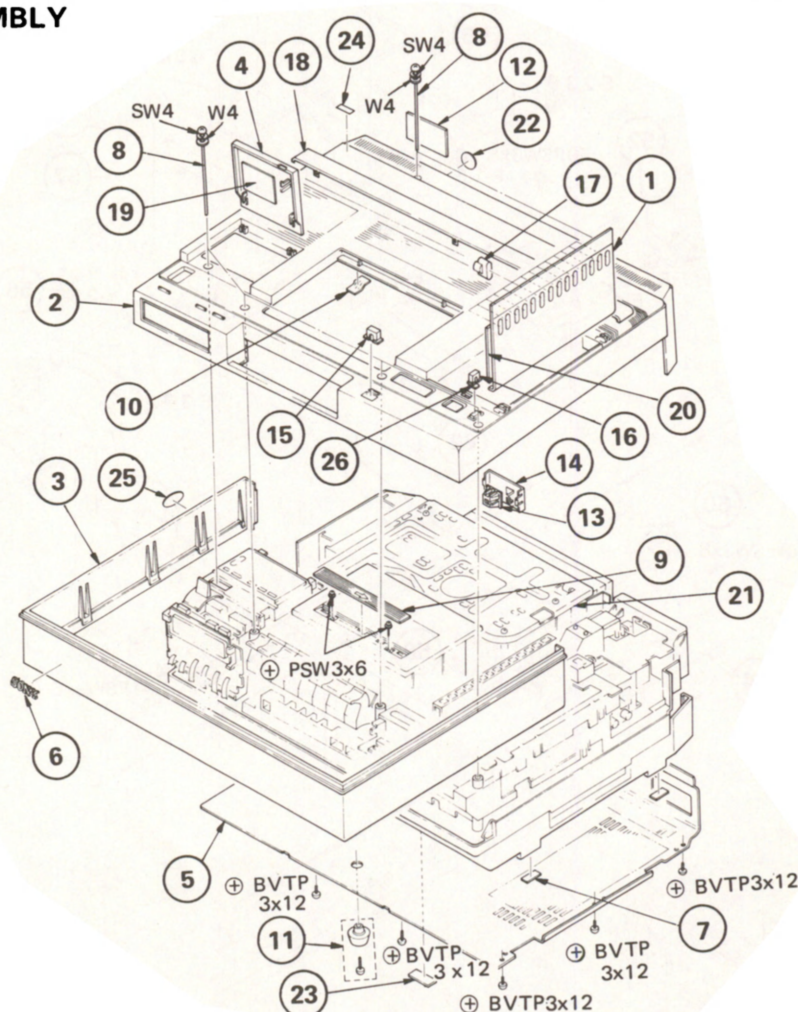
Note:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "♠" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

A B C D

CABINET ASSEMBLY

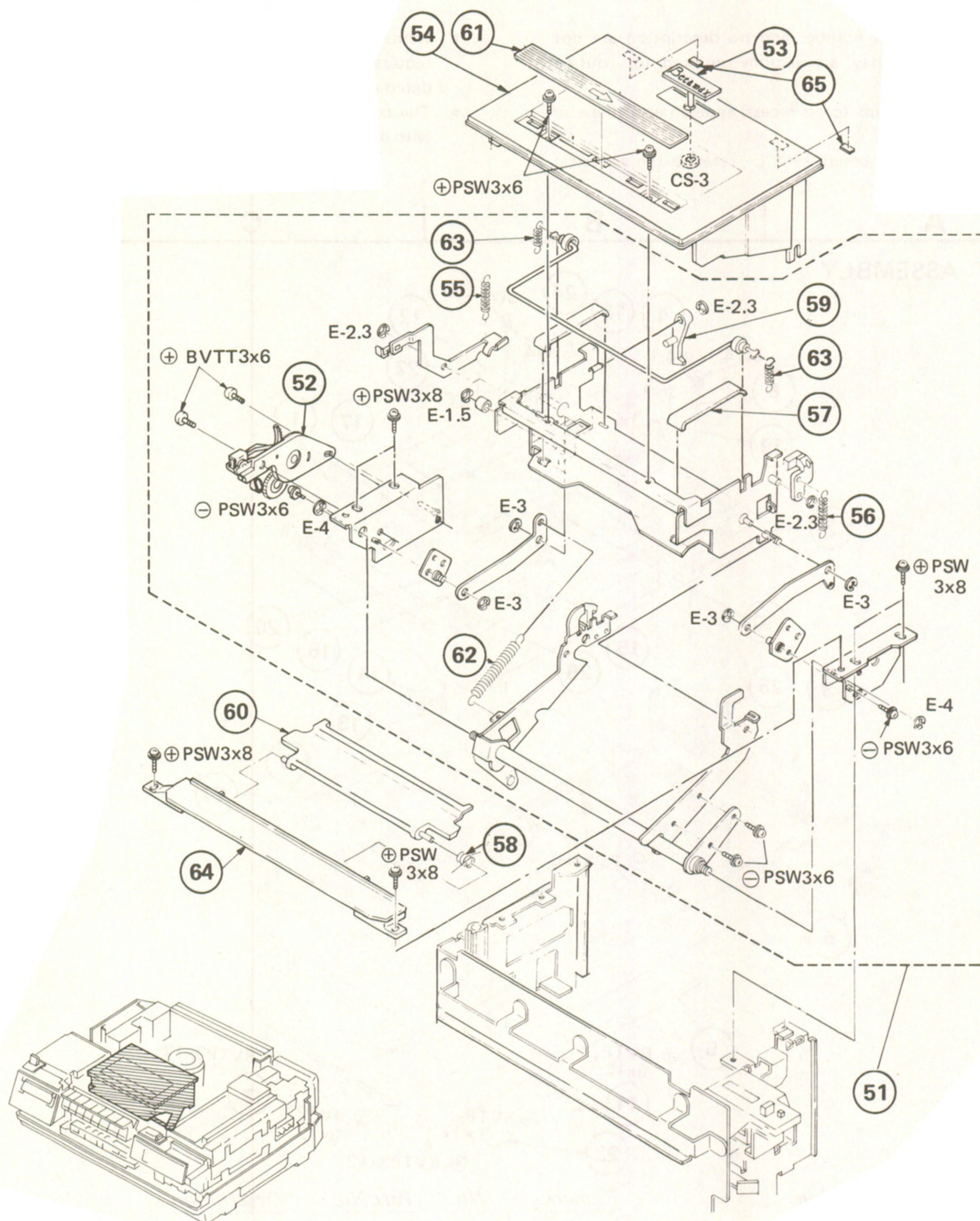
1
2
3



No.	Part No.	Description	Remark
1	X-3661-511-0	COVER ASS'Y, tuner ————	20
2	X-3661-529-0	CASE ASS'Y, upper —————	10, 18, 24
3	X-3661-530-0	FRAME ASS'Y, inner	
4	X-3661-533-0	COVER ASS'Y, timer ————	19
5	X-3661-560-0	PLATE ASS'Y (W), bottom	
6	3-548-973-00	EMBLEM, SONY	
7	3-659-532-00	FELT, foot	
8	3-659-533-00	SCREW, cabinet	
9	3-659-585-00	STRIP, ornamental; cassette	
10	3-659-748-00	CLOTH MASKING, upper case	
11	3-659-768-00	FOOT	
12	3-661-542-00	LABEL, model number	
13	3-661-544-00	HOLDER, switch	
14	3-661-612-00	COVER, switch	
15	3-661-613-00	KNOB, speed	
16	3-661-614-00	BUTTON, antenna selection	
17	3-661-649-00	BUTTON, channel	
18	♠3-661-650-00	BAND, ornamental	
19	3-661-704-00	LABEL, timer cover	
20	3-661-705-00	LABEL, tuner cover	
21	♠3-661-757-00	COVER, shield	
22	3-701-915-01	LABEL, UL	
23	3-703-043-21	LABEL, caution; main	
24	3-703-082-21	LABEL, caution	
25	3-703-184-01	LABEL, material indicating	
26	4-859-909-01	SPACER, switch	

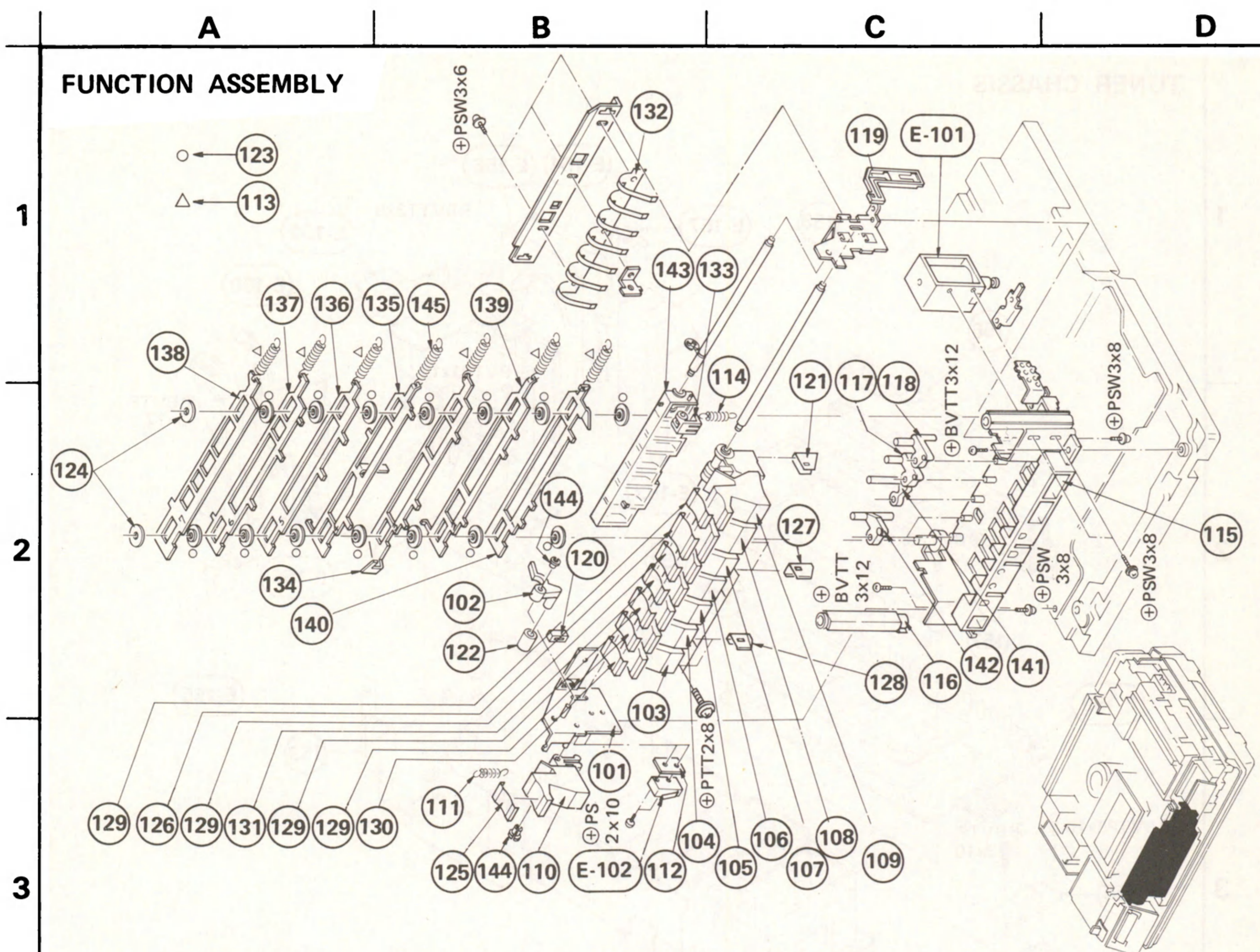
A	B	C	D

CASSETTE LIFT ASSEMBLY



No.	Part No.	Description	Remark
51	A-6751-061-A	CASSETTE-UP BLOCK ASS'Y	52, 55, 56 57, 59, 62 63
52	A-6751-079-A	DAMPER ASS'Y, rotary	
53	X-3658-101-0	EMBLEM ASS'Y (P)	
54	X-3661-558-0	LID (W) ASS'Y, cassette-up	53, 65
55	3-536-006-XX	SPRING, tension	
56	3-642-490-00	SPRING, tension	
57	3-659-498-00	CUSHION, cassette holder	
58	3-659-531-00	SPRING	
59	3-659-579-00	LEVER, release; lid lock	
60	3-659-583-00	PLATE, blind; cassette	
61	3-659-585-00	STRIP, ornamental; cassette	
62	3-659-635-00	SPRING, tension	
63	3-659-636-00	SPRING, tension	
64	3-661-681-00	GUIDE, cassette	
65	3-661-709-00	FEELER, gap	

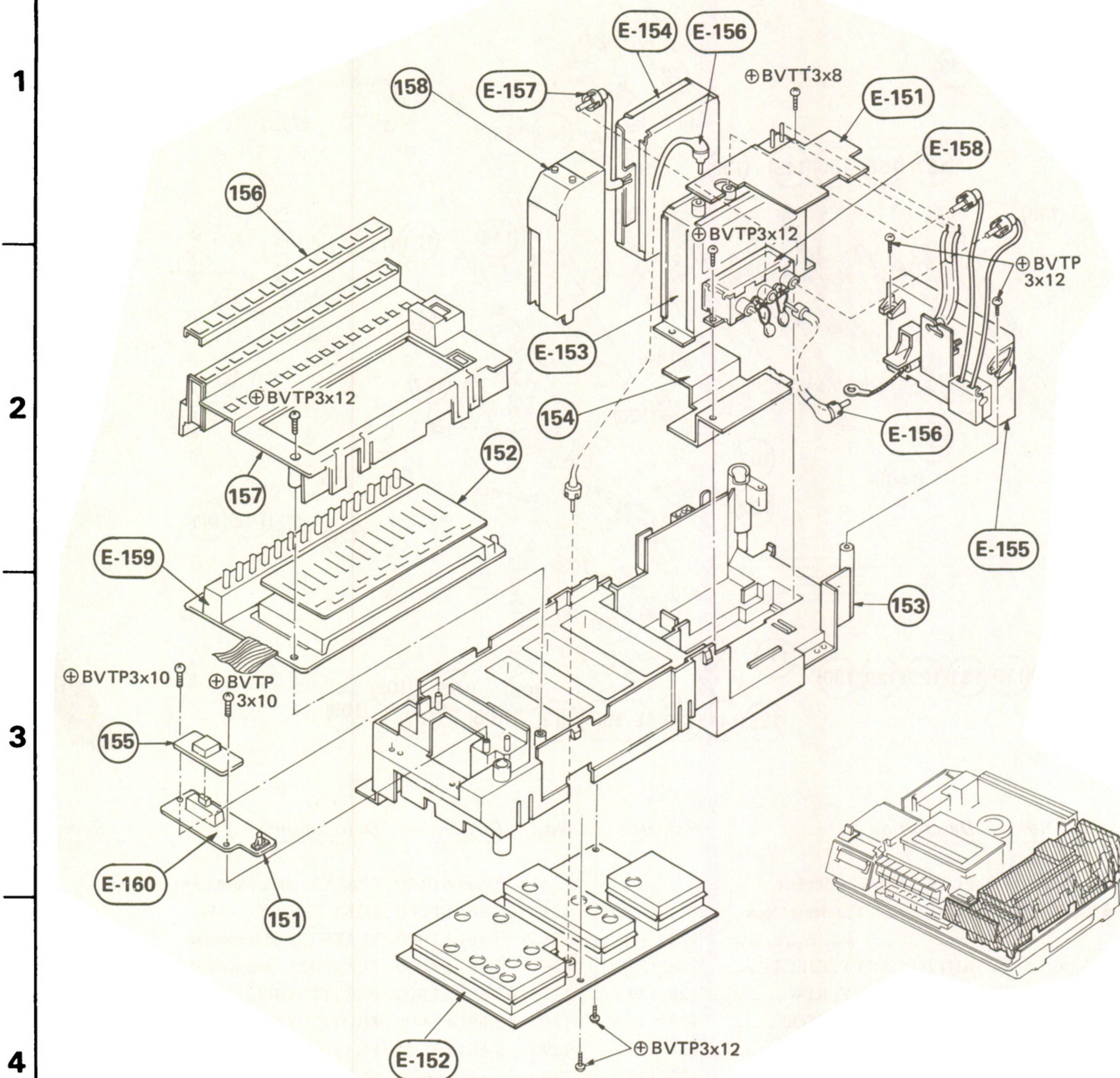
FUNCTION ASSEMBLY



No.	Part No.	Description	Remark
101	♠X-3661-517-0	PLATE ASS'Y, side; left	
102	♠X-3661-519-0	LEVER ASS'Y, release; lock plate	122
103	X-3661-534-0	BUTTON ASS'Y, EJECT	128, 130
104	X-3661-535-0	BUTTON ASS'Y, REW	128, 129
105	X-3661-536-0	BUTTON ASS'Y, STOP	129
106	X-3661-537-0	BUTTON ASS'Y, FWD	131
107	X-3661-538-0	BUTTON ASS'Y, FF	127, 129
108	X-3661-539-0	BUTTON ASS'Y, REC	126, 127
109	X-3661-540-0	BUTTON ASS'Y, DUB	121, 129
110	X-3661-541-0	BUTTON ASS'Y, PAUSE	125
111	3-143-117-00	SPRING, tension	
112	3-534-263-00	PLATE, insulating; M. SW	
113	3-536-006-XX	SPRING, tension	
114	3-630-622-00	SPRING, tension	
115	♠3-661-555-00	FRAME, lower	
116	♠3-661-575-00	SUPPORT	
117	3-661-578-00	LEVER, change; FF	
118	3-661-579-00	LEVER, change; REC	
119	♠3-661-581-00	PLATE, release	
120	♠3-661-584-00	RUBBER, silence	
121	♠3-661-585-00	PROTECTOR (1)	
122	3-661-588-00	SPACER	
123	3-661-610-00	SPACER, slide plate (6-8)	
124	3-661-611-00	POLY SLIDER (6-14)	
125	3-661-631-00	PLATE (3), ornamental	
126	3-661-632-00	PLATE (2), ornamental	
127	♠3-661-633-00	PROTECTOR (2)	
128	♠3-661-634-00	PROTECTOR (3)	
129	3-661-635-01	PLATE (1), ornamental	
130	3-661-635-11	PLATE (1), ornamental	
131	3-661-635-21	PLATE (1), ornamental	
132	3-661-636-00	SPRING	
133	♠3-661-640-00	PLATE (2), lock	
134	♠3-661-661-00	PLATE, FF	
135	♠3-661-662-00	PLATE, FWD	
136	♠3-661-663-00	PLATE, EJECT	
137	♠3-661-664-00	PLATE, REC	
138	♠3-661-665-00	PLATE, MB	
139	♠3-661-666-00	PLATE, REW	
140	♠3-661-667-00	PLATE, DUB	
141	3-661-671-00	LEVER, release; FWD	
142	3-661-676-00	LEVER, release; EJECT/REW	
143	♠3-661-684-00	PLATE (1), lock	
144	3-703-074-00	CAP 3, shaft	
145	4-859-001-00	SPRING, tension	

A	B	C	D

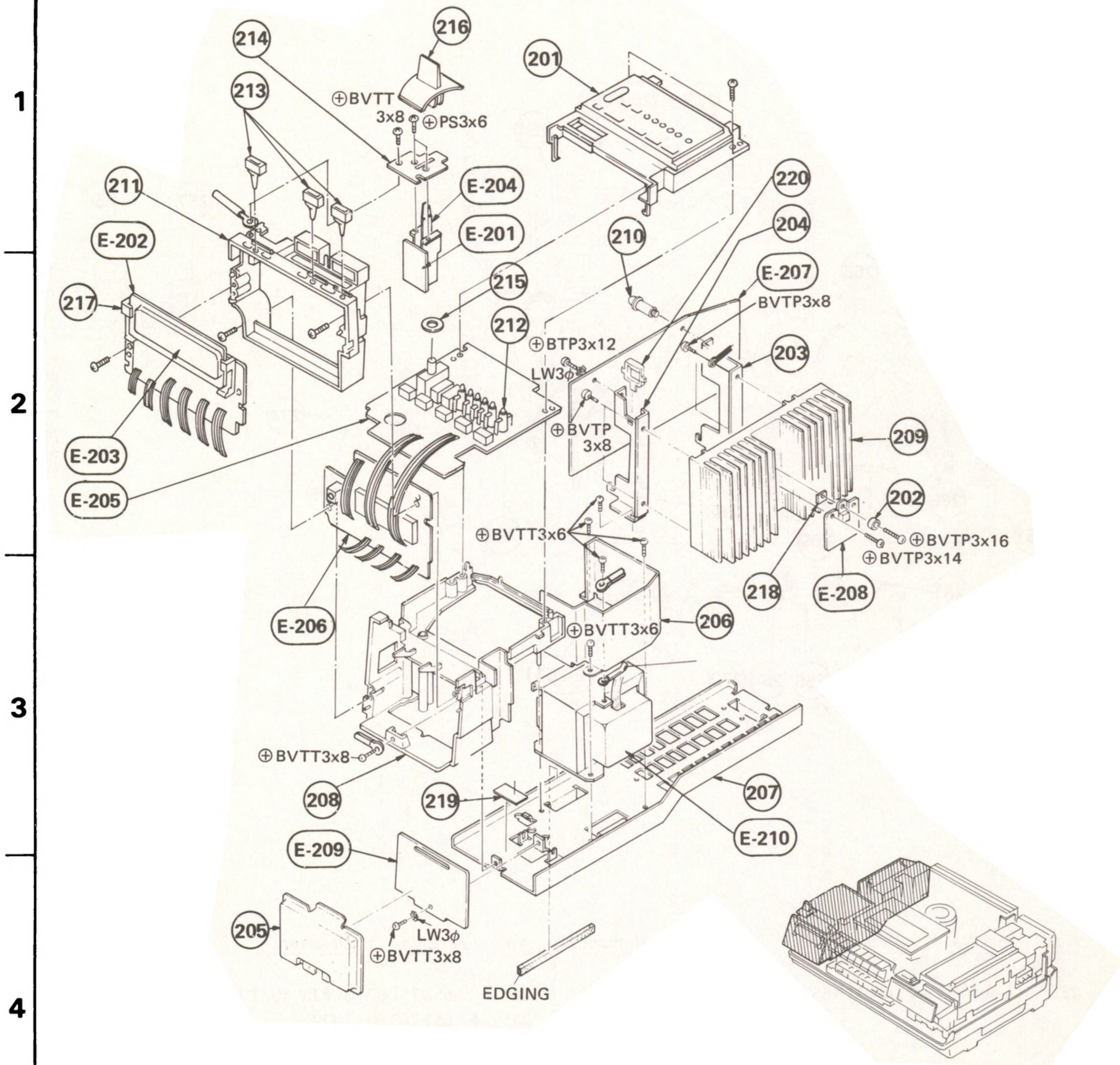
TUNER CHASSIS



No.	Part No.	Description	Remark
151	3-659-792-00	HOLDER (D), LED	
152	3-661-556-00	PLATE, ornamental; tuner	
153	♠3-661-562-00	FRAME, tuner	
154	♠3-661-618-00	PLATE, shield	
155	3-661-619-00	KNOB, slide	
156	3-661-647-00	HOLDER, indicator	
157	3-661-655-00	PLATE (W), ornamental; preset	
158	♠3-661-656-00	CASE, shield; RF modulator	

A	B	C	D

POWER UNIT CHASSIS

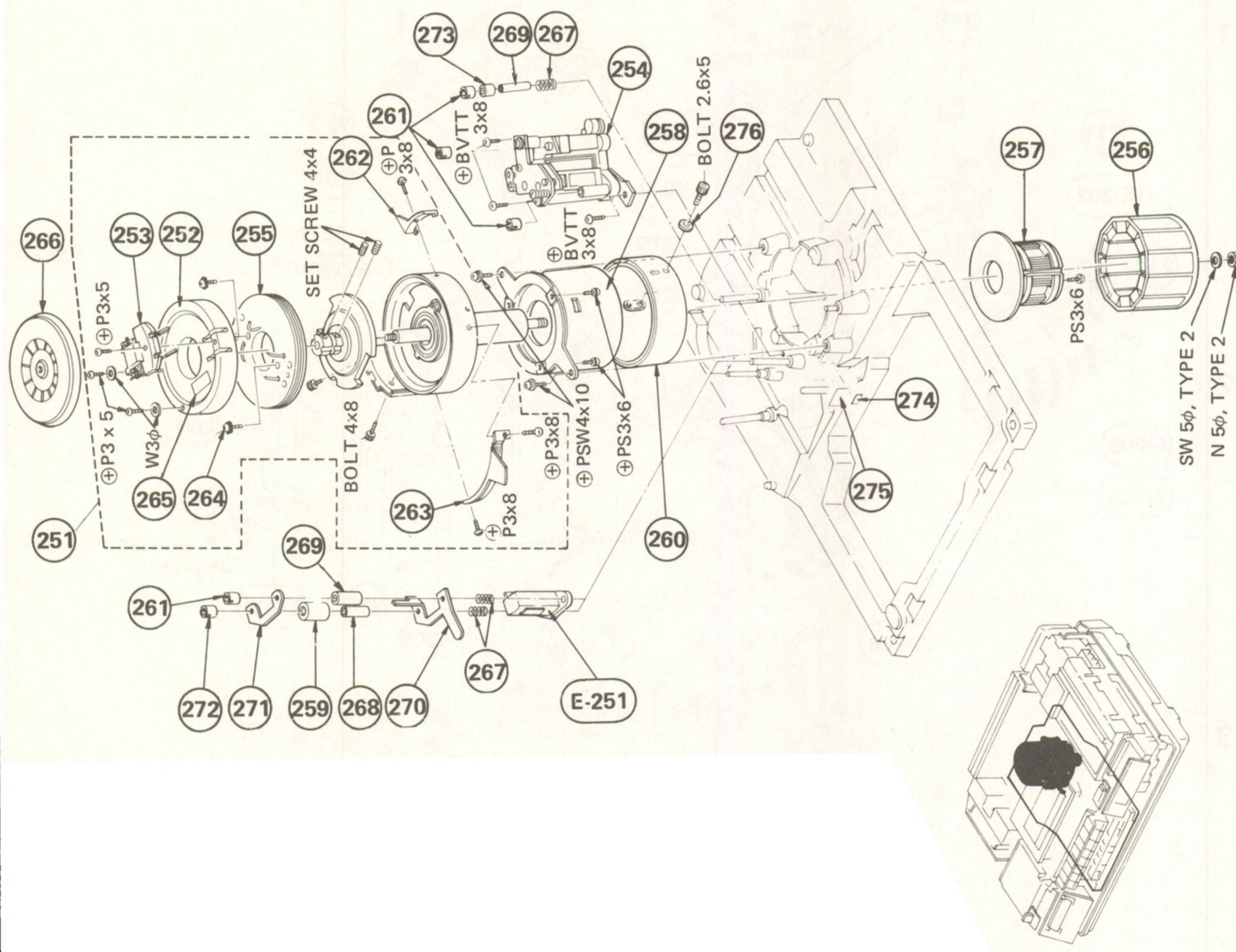


No.	Part No.	Description	Remark
201	X-3661-526-0	BUTTON ASS'Y (W), control; timer	
202	2-832-002-00	BUSHING, insulating	
203	♠3-659-514-02	BRACKET (A), heat sink	
204	♠3-659-515-00	BRACKET (B), heat sink	
205	3-659-516-00	COVER, LF-9 PC board	
206	♠3-659-670-00	PLATE, shield; transformer	
207	♠3-659-672-00	CHASSIS, power unit	
208	♠3-659-674-00	FRAME, rear timer	
209	♠3-659-692-00	HEAT SINK	
210	3-659-743-00	SCREW, step	

No.	Part No.	Description	Remark
211	♠3-661-559-00	FRAME (W), front timer	
212	♠3-661-576-00	HOLDER, LED	
213	♠3-661-615-00	HOLDER, interception	
214	♠3-661-623-00	BRACKET (W), power switch	
215	3-661-624-00	SHEET (W), blind	
216	3-661-645-00	KNOB, power switch	
217	♠3-661-677-00	HOLDER (W), indication tube	
218	3-701-754-00	PLATE, insulating	
219	3-703-044-26	LABEL, caution	
220	♠4-316-015-00	HOLDER, wire	

A	B	C	D

DRUM ASSEMBLY



No.	Part No.	Description	Remark
251	A-6050-043-A	DRUM ASS'Y	252, 253, 255, 262, 263, 264, 265
252	A-6760-050-A	DRUM ASS'Y, upper	253
253	A-6761-013-B	SPRING ASS'Y, tape retainer	
254	A-6761-034-A	A.C.E. ASS'Y	261
255	A-6762-031-A	VIDEO HEAD DISK ASS'Y	
256	♠X-2619-402-0	ROTOR ASS'Y	
257	X-2691-403-0	STATOR ASS'Y	
258	X-3652-713-0	CASE ASS'Y, shield	
259	X-3659-304-0	ROLLER ASS'Y, guide; No. 1	
260	♠X-3659-376-0	SHIELD ASS'Y, drum	
261	3-645-562-00	NUT	
262	3-652-728-00	BRACKET (B), tape	
263	3-652-741-00	BRACKET (A), tape	
264	3-652-751-00	SCREW (⊕ P EXT tooth WS 3 x 8)	
265	♠3-652-783-00	LABEL	
266	3-658-122-00	FAN	
267	3-659-324-00	SPRING, compression	
268	3-659-341-00	SLEEVE, guide; No. 1	
269	3-659-342-00	SLEEVE, guide; No. 2	
270	♠3-659-343-00	BRACKET, tape; entrance	
271	3-659-344-00	PLATE, guide; entrance	
272	3-659-345-00	NUT, guide; No. 1	
273	3-659-716-00	FLANGE, guide	
274	3-660-902-00	LABEL, ID	
275	3-661-700-00	LABEL, serial number	
276	3-845-490-00	WASHER	

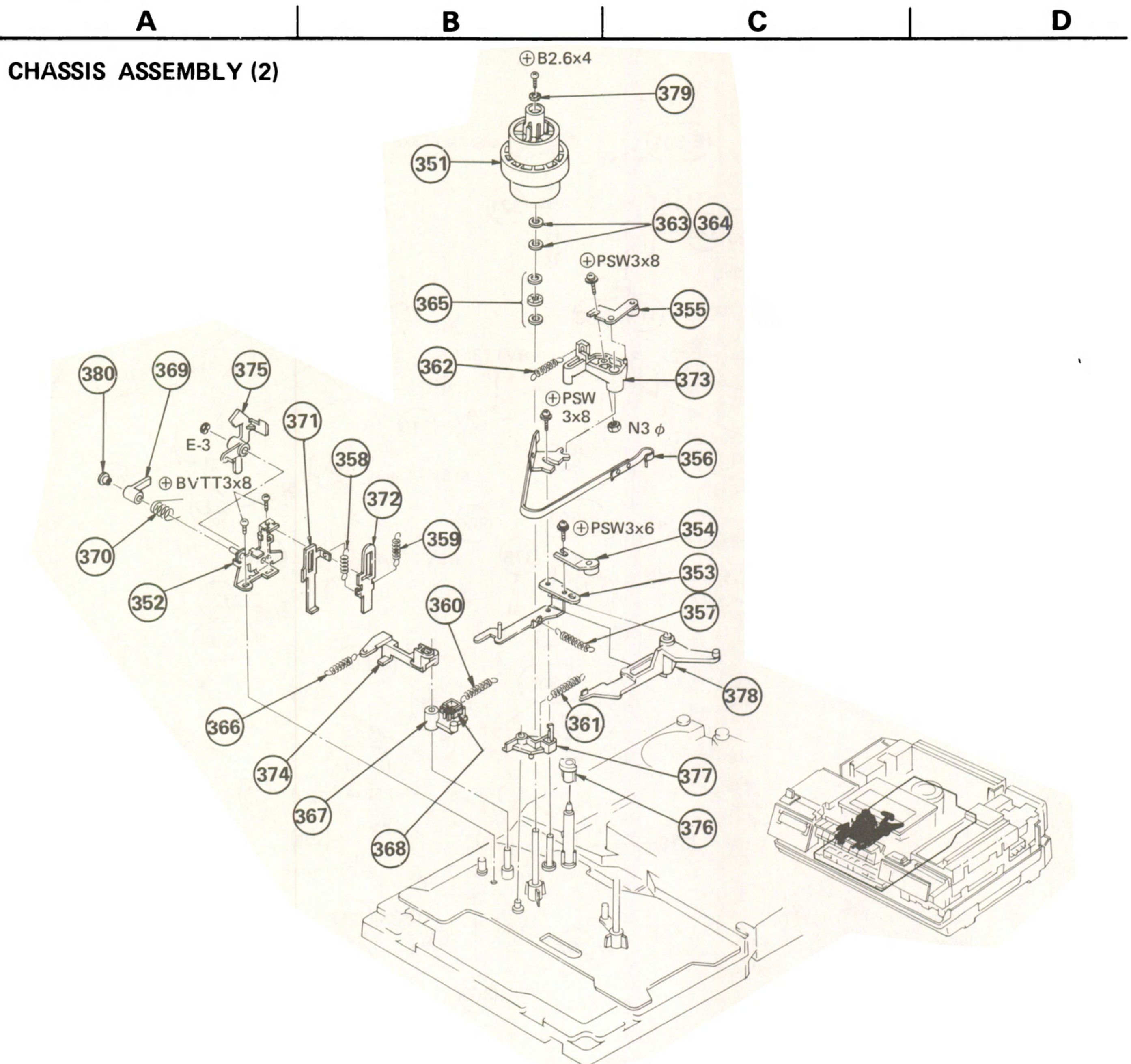
A B C D

CHASSIS ASSEMBLY (1)

No.	Part No.	Description	Remark
301	●X-3659-339-4	CASE (A) MAIN ASS'Y, shield	
302	●X-3659-358-2	LID (A) ASS'Y, upper; shield case	
303	●X-3661-510-0	HOLDER ASS'Y, shield case	
304	●X-3661-513-0	BRACKET ASS'Y, counter	
305	●X-3661-521-0	OPENER ASS'Y, LID	
306	X-3661-525-0	COVER ASS'Y, counter	
307	3-646-071-00	HOLDER, wire	
308	3-646-090-00	RIVET, nylon	
309	●3-655-214-00	CLIP, cable	
310	●3-659-303-00	RETAINER (SMALL), harness	
311	3-659-484-00	PULLEY, midway; counter	
312	●3-659-548-00	HOLDER, T sensor	
313	●3-659-549-00	LID, bottom; shield case (A)	
314	3-659-762-02	ARM, ejector static	
315	3-661-565-00	BELT, counter	
316	●3-661-615-00	HOLDER, interception	
317	●3-661-646-00	BRACKET, cassette-up (left)	
318	●3-661-670-00	BRACKET (1), cassette (right)	
319	●3-661-679-00	LEG (left), rear	
320	●3-661-680-00	LEG (right), rear	
321	3-661-703-00	HOLDER, DS-3 board, PCB	
322	●3-661-764-00	HOLDER, PCB	
323	3-661-791-00	SCREW, step	
324	3-701-748-00	CLAMP	
325	●3-703-072-00	HOLDER, plate; P	
326	3-703-075-00	CAP2, shaft	
327	●3-703-141-00	HOLDER, PCB	
328	●4-308-119-00	HOLDER, wire	
329	●4-857-472-00	CLAMP	

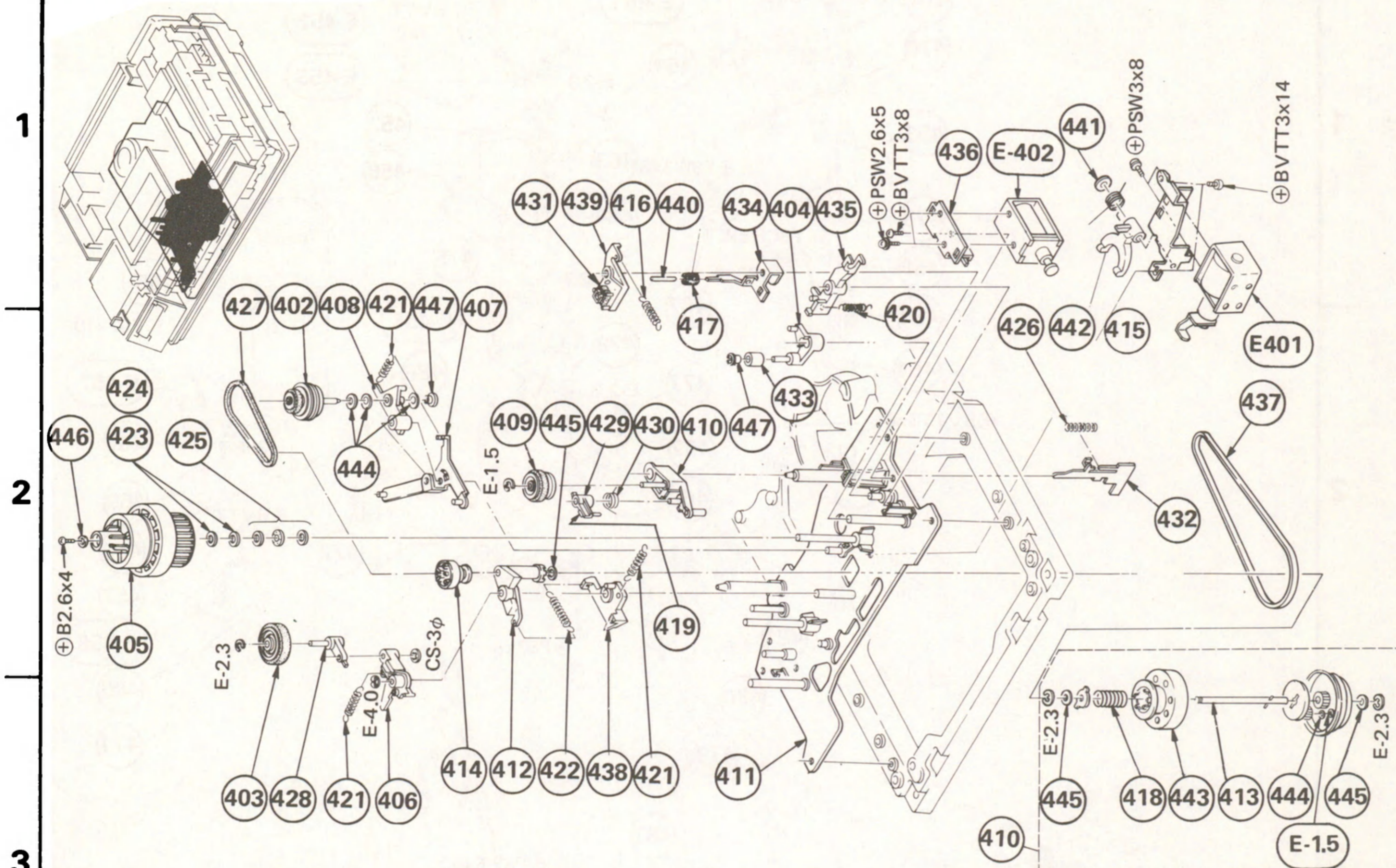
A	B	C	D

CHASSIS ASSEMBLY (2)



No.	Part No.	Description	Remark
351	X-3659-315-0	REEL ASS'Y, S	
352	♠X-3659-317-0	BRACKET ASS'Y, lock	
353	♠X-3659-322-0	ARM ASS'Y, ring	
354	X-3659-323-0	PLATE ASS'Y, adjustment; R	
355	X-3659-326-0	ARM ASS'Y, cassette compartment	
356	X-3659-328-2	BAND ASS'Y, tension regulator	
357	3-143-060-00	SPRING, tension	
358	3-492-150-00	SPRING, tension	
359	3-532-725-00	SPRING, tension	
360	3-534-217-00	SPRING, tension	
361	3-536-006-XX	SPRING, tension	
362	3-537-205-00	SPRING, tension	
363	3-646-184-00	SPACER (T: 0.2)	
364	3-646-184-11	SPACER (T: 0.1)	
365	3-646-185-00	BEARING	
366	3-648-626-00	SPRING, tension	
367	♠3-659-445-00	BRAKE, S	
368	3-659-446-00	LINING, brake	
369	♠3-659-454-00	ARM, ring lock	
370	3-659-455-00	SPRING	
371	♠3-659-457-00	PLATE, slide; MS	
372	♠3-659-458-00	DETECTION, cassette	
373	♠3-659-562-00	ARM (1), cassette compartment	
374	♠3-659-567-00	BRAKE, soft	
375	3-659-624-00	LOCK, cassette compartment	
376	3-660-916-00	STOPPER, END	
377	♠3-661-564-00	LEVER, press; REW	
378	♠3-661-589-00	ARM, BS	
379	3-701-441-21	WASHER	
380	3-703-074-00	CAP3, shaft	

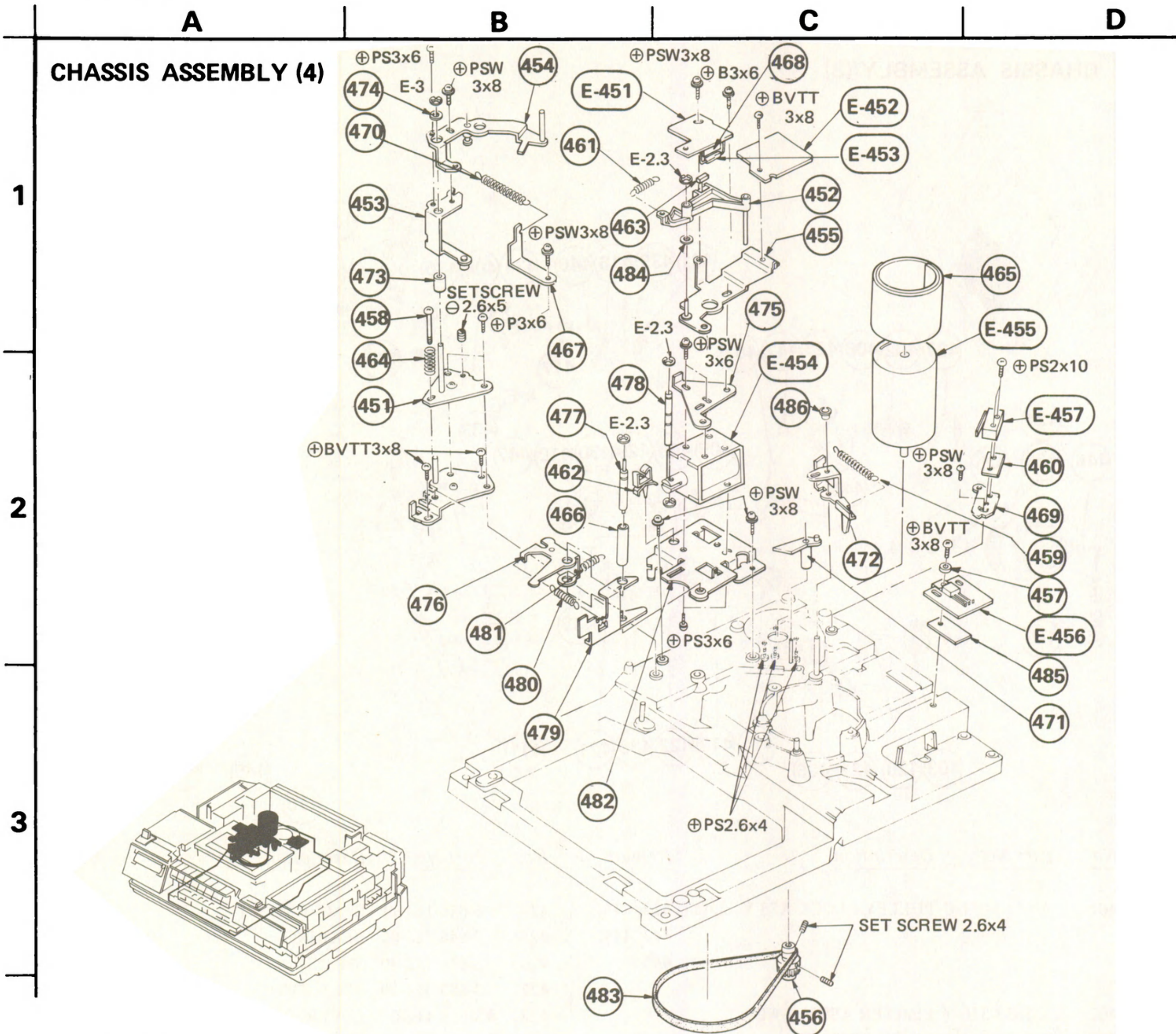
CHASSIS ASSEMBLY (3)



No.	Part No.	Description	Remark
401	A-6740-051-C	PULLEY BLOCK ASS'Y, clutch	413, 418, 443, 444, 445
402	X-3653-310-0	LIMITER ASS'Y, FWD	
403	X-3653-315-0	IDLER ASS'Y	
404	♠X-3659-311-0	ARM ASS'Y, TB	
405	X-3659-316-3	REEL ASS'Y, T	
406	♠X-3659-318-0	BRACKET ASS'Y, adjustment	
407	X-3659-319-0	LEVER ASS'Y, FWD	
408	X-3659-320-0	ARM ASS'Y, FWD	
409	X-3659-324-0	IDLER ASS'Y, E	
410	♠X-3659-325-0	ARM ASS'Y, E idler	
411	♠X-3659-347-0	CHASSIS ASS'Y, mechanism	
412	X-3661-512-2	ARM ASS'Y, FF	
413	X-3661-518-0	SHAFT ASS'Y, pulley midway	
414	X-3661-520-0	PULLEY ASS'Y, midway	
415	♠X-3661-572-0	FRAME ASS'Y, solenoid	
416	3-534-217-00	SPRING, tension	
417	3-538-051-11	RUBBER, BRAKE	
418	3-543-966-00	SPRING, compression	
419	3-553-038-00	SPACER, EBF	
420	3-632-263-00	SPRING, tension	
421	3-642-483-00	SPRING, tension	
422	3-645-168-00	SPRING, tension	
423	3-646-184-00	SPACER (T: 0.2)	
424	3-646-184-11	SPACER (T: 0.1)	
425	3-646-185-00	BEARING	
426	3-646-312-00	SPRING	
427	3-653-324-00	BELT, FWD	
428	♠3-659-416-00	LEVER, REW	
429	♠3-659-431-00	CLAW, ratchet	
430	3-659-432-00	SPRING	
431	3-659-446-00	LINING, brake	
432	♠3-659-456-00	PLATE, erasing protection	
433	3-659-464-00	ROLLER, TB arm	
434	♠3-659-468-00	BRAKE, P	
435	♠3-659-469-00	ARM PRESS, PB	
436	♠3-659-470-00	BASE, PB solenoid	
437	3-659-471-00	BELT, FF	
438	♠3-659-564-00	LEVER, FF press	
439	♠3-659-791-00	BRAKE, T	
440	♠3-660-941-00	RETAINER, brake rubber	
441	3-661-570-00	SPRING	
442	♠3-661-574-00	LEVER, clutch	
443	3-661-674-02	CLUTCH, gear	
444	3-701-437-21	WASHER	
445	3-701-439-21	WASHER	
446	3-701-441-21	WASHER	
447	3-703-075-00	CAP2, shaft	

Ring, E, E2.3 = 7-624-105-04

CHASSIS ASSEMBLY (4)



No.	Part No.	Description	Remark
451	♠X-3659-305-0	PLATE ASS'Y, adjustment	
452	X-3659-310-0	ARM ASS'Y, detection; slack	
453	♠X-3659-369-0	ARM ASS'Y, tension regulator	
454	♠X-3659-370-2	PLATE ASS'Y, arm	
455	♠X-3659-380-0	BASE ASS'Y	
456	X-3661-524-0	PULLEY ASS'Y, motor	
457	2-832-002-00	BUSHING, insulating	
458	♠3-437-173-02	SCREW, head adjusting	
459	3-533-223-11	SPRING, tension	
460	3-534-263-00	INSULATOR	
461	3-542-476-00	SPRING, tension	
462	♠3-644-407-00	CLIP, AC wire; E	
463	3-646-571-00	MAGNET	
464	3-652-413-00	SPRING, compression	
465	♠3-658-173-00	SHIELD, capstan	
466	♠3-658-194-00	SPACER (4-25)	
467	♠3-659-319-00	PLATE, adjustment; BT	
468	♠3-659-359-00	PLATE, boost; reed switch	

No.	Part No.	Description	Remark
469	♠3-659-360-00	BRACKET, threading end; MS	
470	3-659-378-02	SPRING, tension	
471	♠3-659-392-00	ARM, lock keep	
472	♠3-659-557-03	ARM, lock keep	
473	3-659-757-00	SPACER	
474	3-659-758-00	WASHER	
475	♠3-659-775-00	PLATE, adjustment; lever shaft	
476	♠3-659-777-00	LEVER (B), pinch press	
477	♠3-659-778-00	SHAFT, pinch press lever	
478	3-659-780-00	PIN, LEVER, pinch press	
479	♠3-659-781-00	LEVER (A), pinch press	
480	3-659-784-00	SPRING, tension	
481	3-659-785-00	SPRING, tension	
482	♠3-659-789-00	BASE, pinch plunger	
483	3-661-708-00	BELT, capstan	
484	3-701-439-21	WASHER	
485	3-701-754-00	PLATE, insulating	
486	3-703-074-00	CAP3, shaft	

A	B	C	D

CHASSIS ASSEMBLY (5)

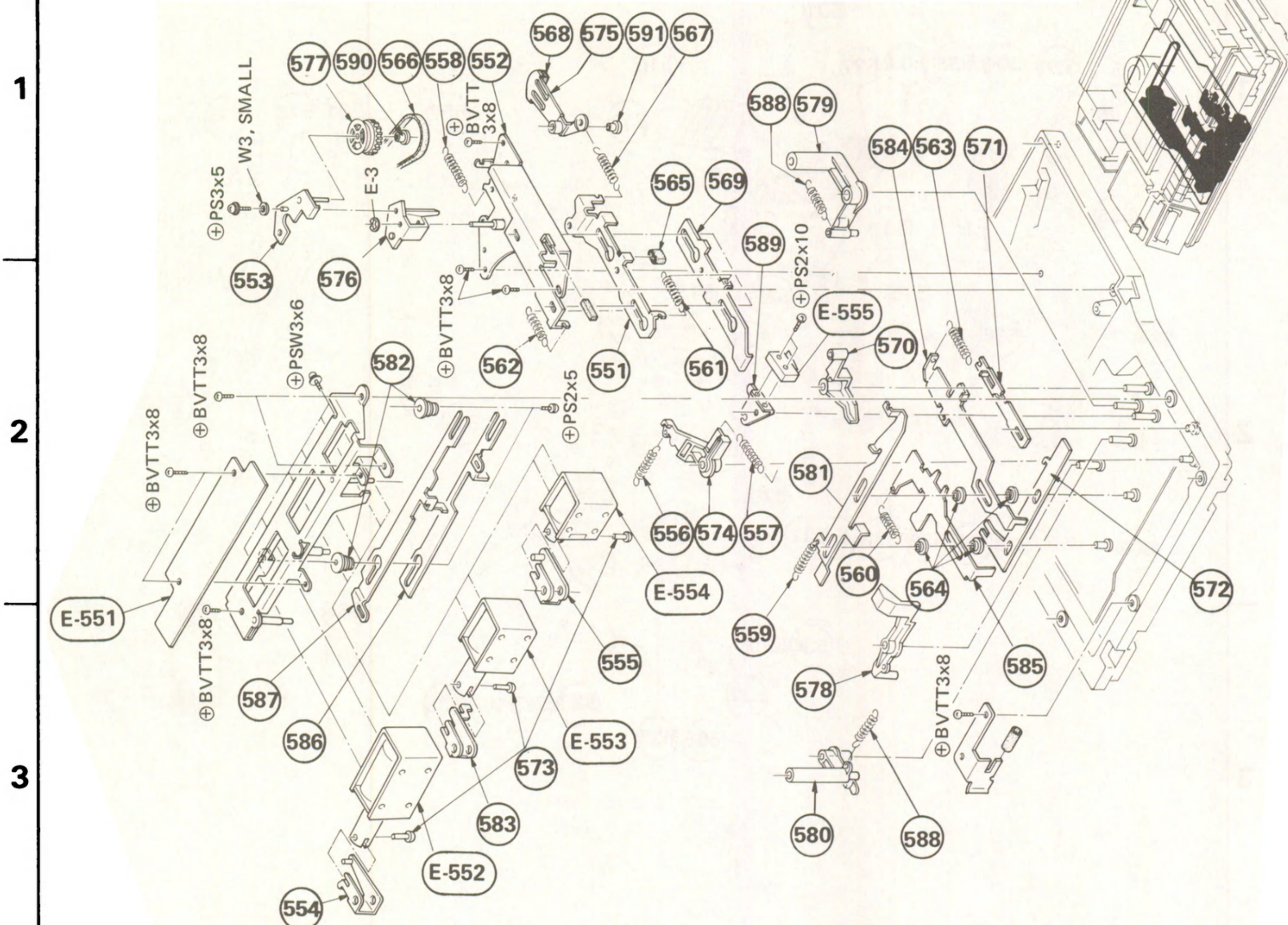
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No.	Part No.	Description	Remark
501	A-6735-029-A	CAPSTAN BLOCK ASS'Y	
502	A-6750-087-A	RING BLOCK ASS'Y, threading	509, 524
503	X-3659-301-0	LIMITER ASS'Y, E	
504	●X-3659-307-0	SUPPORT ASS'Y, ring roller	
505	X-3659-308-0	GUIDE ASS'Y, No. 0	
506	X-3659-333-0	STOPPER ASS'Y, tension regulator	
507	X-3659-334-0	HOUSING ASS'Y, capstan	
508	X-3659-335-5	LINK ASS'Y (1), release	
509	X-3659-337-0	ARM ASS'Y, pinch roller	
510	●X-3659-340-0	BRACKET ASS'Y, midway pulley	
511	X-3659-386-3	LINK ASS'Y (2), release	
512	3-646-182-00	CAP, oil	
513	3-646-183-00	ABSORBER, capstan oil	
514	3-658-161-00	HOLDER, DME	
515	3-659-302-00	PULLEY, idle	
516	3-659-312-00	RETAINER, capstan	
517	●3-659-313-00	PLATE, adjustment; DME	
518	3-659-314-00	RETAINER, thrust	
519	●3-659-320-00	HOOK, spring; release	
520	3-659-337-00	FLANGE No. 0, guide upper	
521	3-659-338-00	SPRING, compression	
522	3-659-350-00	POLY-SLIDER (3.4 ϕ)	
523	3-659-365-00	SPACER	
524	3-659-388-00	SPRING	
525	3-659-391-00	ROLLER, ring	
526	3-659-396-00	GEAR (B), midway	
527	3-659-397-00	BELT, eject	
528	●3-659-414-00	PLATE, control	
529	3-659-551-00	FRAME, guide; No. 0	
530	●3-659-632-00	HOLDER, S sensor	
531	●3-659-691-00	RETAINER (LARGE), harness	
532	3-659-759-11	SPACER, capstan	
533	3-660-911-00	SPRING, tension	
534	3-701-441-11	WASHER	
535	3-701-441-21	WASHER	
536	3-703-074-00	CAP3, shaft	
537	3-703-075-00	CAP2, shaft	
538	4-829-039-00	RIVET, nylon	

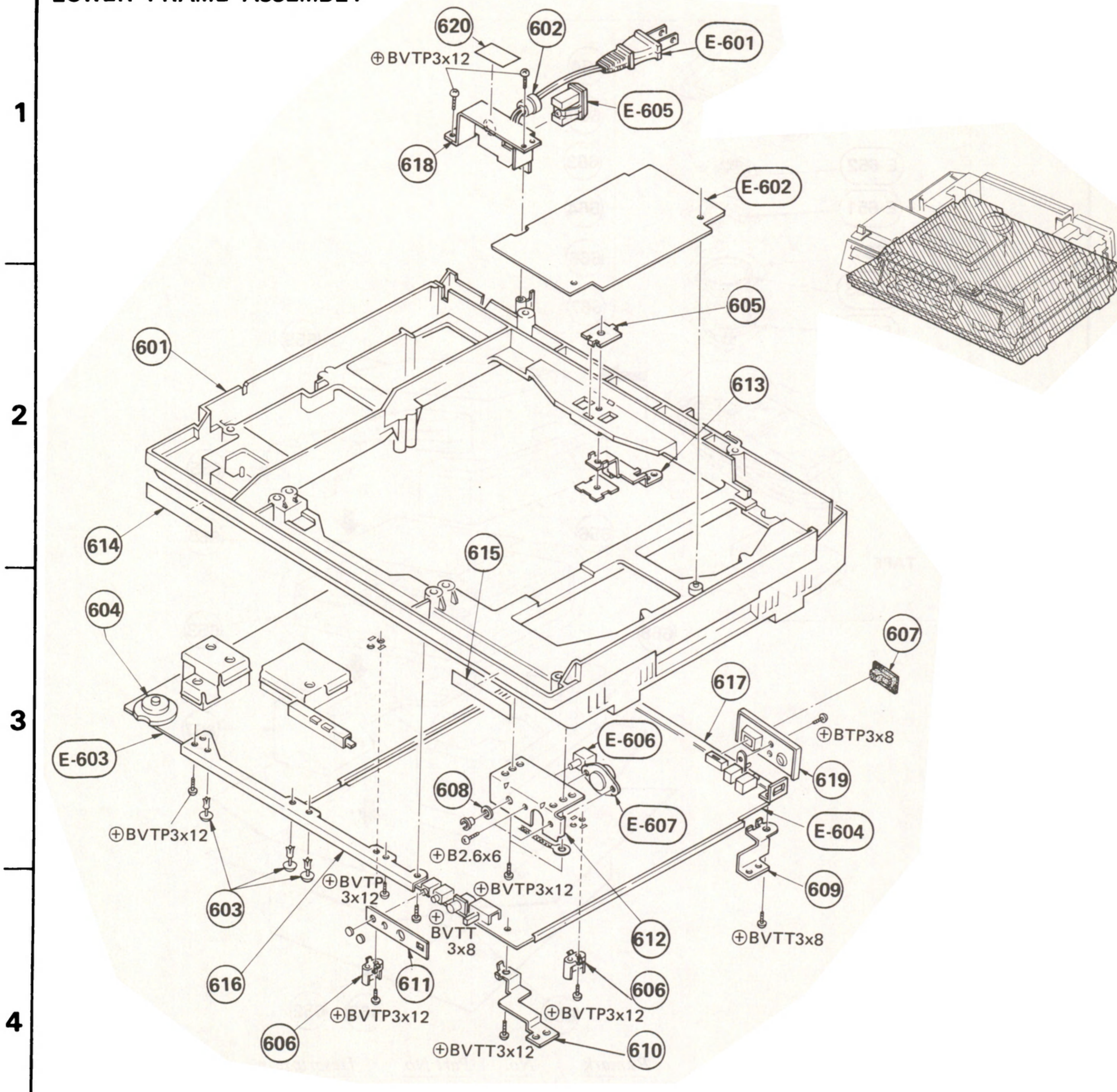
CHASSIS ASSEMBLY (6)



No.	Part No.	Description	Remark
551	♠X-3659-303-0	LEVER (LOWER) ASS'Y, eject	
552	♠X-3659-359-0	BASE ASS'Y, threading unit	
553	♠X-3659-360-0	ARM (B) ASS'Y, gear pulley hold	
554	♠X-3661-515-0	LEVER ASS'Y, F	
555	♠X-3661-516-0	LEVER ASS'Y, R	
556	3-143-060-00	SPRING, tension	
557	3-532-125-00	SPRING, tension	
558	3-533-223-11	SPRING, tension	
559	3-535-411-00	SPRING, tension	
560	3-639-371-00	SPRING, tension	
561	3-642-510-00	SPRING, tension	
562	♠3-642-513-00	SPRING, tension	
563	3-645-135-00	SPRING, tension	
564	3-646-271-00	BOSS	
565	3-655-856-11	RETAINER, tension regulator	
566	3-659-301-00	BELT, threading	
567	3-659-393-00	SPRING, tension	
568	3-659-394-00	SHOE, brake	
569	♠3-659-395-00	LEVER (UPPER), eject	
570	3-659-453-00	ARM, EL	
571	♠3-659-460-00	PLATE, release; lock	
572	♠3-659-461-00	JOINT	
573	3-659-481-00	PIN, solenoid	
574	3-659-560-00	ARM, E	
575	♠3-659-679-00	ARM, motor brake	
576	♠3-659-705-00	ARM (A), gear pulley hold	
577	3-659-706-00	PULLEY, gear	
578	♠3-661-590-00	LEVER, release; slide switch	
579	♠3-661-597-00	LEVER (A), slide switch	
580	♠3-661-598-03	LEVER (R), slide switch	
581	♠3-661-599-00	PLATE, slide; REC	
582	3-661-601-00	GUIDE (1, 6), 2 step slide	
583	♠3-661-602-00	LEVER, FF	
584	♠3-661-608-00	PLATE, slide; FWD	
585	3-661-630-00	PLATE, slide; DUB	
586	♠3-661-672-00	PLATE, slide; R	
587	♠3-661-673-00	PLATE, slide; F	
588	3-661-712-00	SPRING, tension	
589	♠3-663-005-00	BRACKET (P), CSW	
590	3-703-074-00	CAP3, shaft	
591	3-703-075-00	CAP2, shaft	

A	B	C	D

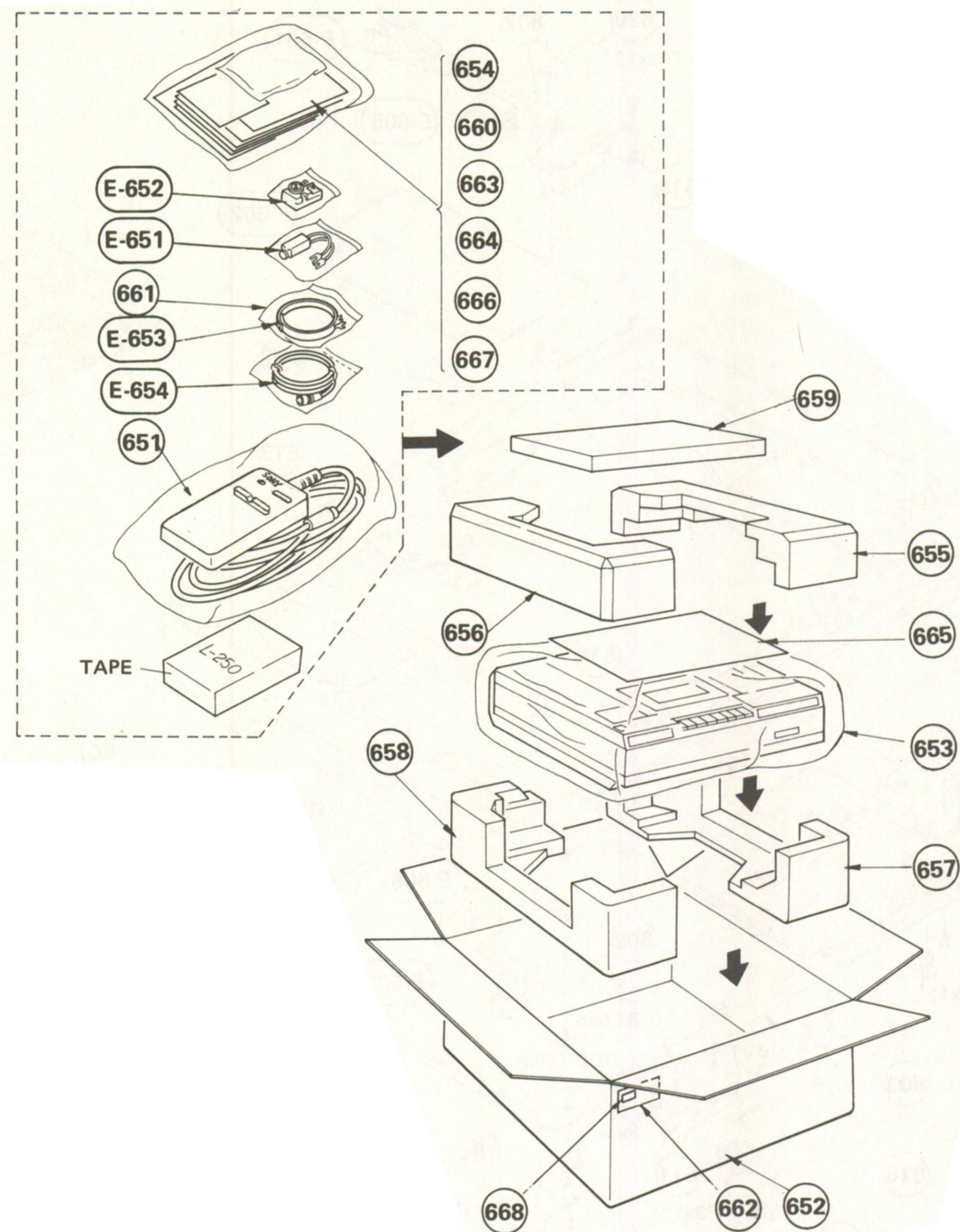
LOWER FRAME ASSEMBLY



No.	Part No.	Description	Remark
601	X-3661-528-0	FRAME ASS'Y, lower ————	613, 614, 615
602	2-231-019-00	CLAMPER, cord	
603	3-646-090-00	RIVET, nylon	
604	3-659-528-00	KNOB, tracking control	
605	♠3-659-529-00	SPACER, plate	
606	3-659-530-00	BLOCK, support; bottom plate	
607	3-659-720-00	STOPPER, slide switch	
608	3-660-907-00	WASHER	
609	♠3-661-571-00	PLATE (A), ground; bottom plate	
610	♠3-661-572-00	PLATE (B), ground; bottom plate	
611	3-661-620-00	COVER, input	
612	♠3-661-621-00	BRACKET, connector	
613	♠3-661-622-00	JOINT, ground	
614	3-661-627-00	LABEL, tracking control	
615	3-661-628-00	LABEL, input	
616	♠3-661-657-00	BRACKET (A), chassis	
617	♠3-661-658-00	BRACKET (B), chassis	
618	3-661-660-00	PANEL, power	
619	3-661-707-00	COVER, output	
620	3-703-044-26	LABEL, caution	

A	B	C	D

PACKING



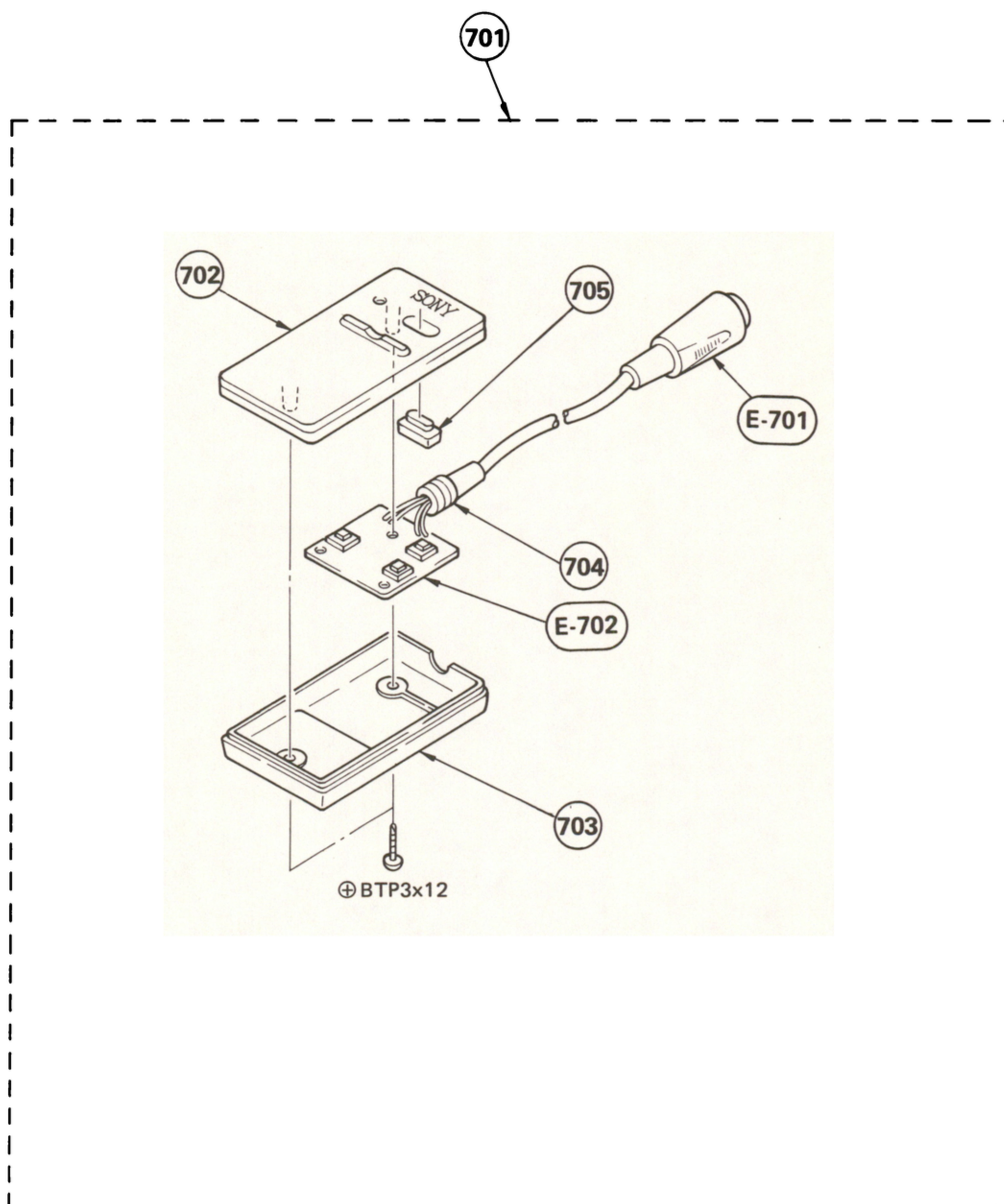
No.	Part No.	Description	Remark
651	A-6701-067-A	COMMANDER ASS'Y, remote	
652	X-3661-532-0	INDIVIDUAL CARTON ASS'Y	
653	3-656-390-00	BAG, protection	
654	3-661-648-00	INDICATOR (W), accessory	
655	3-661-694-00	CUSHION, right upper	
656	3-661-695-00	CUSHION, left upper	
657	3-661-696-00	CUSHION, right lower	
658	3-661-697-00	CUSHION, left lower	
659	3-661-699-00	CASE, accessory	

No.	Part No.	Description	Remark
660	3-701-352-00	BAG, polyethylene	
661	3-701-624-00	BAG, polyethylene	
662	3-703-157-01	LABEL, destination	
663	3-770-987-21	MANUAL, instruction	
664	3-771-987-21	QUESTIONNAIRE	
665	3-793-962-21	CARD, caution	
666	3-794-573-21	MANUAL, instant information	
667	4-491-335-21	CARD, warranty	
668	4-491-336-21	REGISTRATION	
E-651	1-417-063-00	TRANSFORMER, antenna (EAC-24)	
E-652	1-513-379-00	CONVERTER (EAC-25)	
E-653	1-551-139-00	CORD, connection	
E-654	1-551-644-41	CORD, connection	

A B C D

COMMANDER BLOCK ASSEMBLY

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No.	Part No.	Description	Remark
701	A-6701-067-A	COMMANDER ASS'Y, remote	702~707
702	X-3661-522-0	CASE ASS'Y, upper	
703	X-3661-523-0	CASE ASS'Y, lower	
704	3-659-700-00	BUSHING, cord	
705	3-659-728-11	PAUSE, key top	
706	3-701-613-00	BAG, polyethylene	
707	3-701-625-00	BAG, polyethylene	
E-701	1-551-818-00	CORD, with DIN plug 6P	
E-702	♠1-600-475-00	RC-4 Board	

SECTION 5
ELECTRICAL PARTS LIST

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

- ⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- ※ : selected to yield optimum performance.
- Items marked "♠" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics. p : μμF, elect : electrolytic

RESISTORS

- All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 69 for their part numbers.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
  kΩ : 1000Ω, MΩ : 1000kΩ

COILS

- All coils are microinductors unless ohterwise noted.

Ref. No.	*Part No.*	*Description*	*Remark*
		CN-3 BOARD	
♠	1-601-151-00	CN-3 Board	E-452
♠CN201	1-508-734-00	3P Connector	
♠CN202	1-508-734-21	3P Connector	
		CN-4 BOARD	
♠	1-601-152-00	CN-4 Board	E-451
S251	1-552-180-00	Reed, Slack sensor	E-453
		CR-6 BOARD	
♠	A-6711-210-A	CR-6 Board, Complete	E-602
C401	1-123-306-00	47 10V elect	
C402	1-102-978-00	220p	
C403	1-161-051-00	0.01	
C404	1-161-323-00	0.001	
C405	1-123-308-00	220 10V elect	

Ref. No.	*Part No.*	*Description*	*Remark*
C406	1-161-051-00	0.01	
C407	1-161-263-00	22p	
C408	1-161-051-00	0.01	
C409–412	1-161-036-00	0.047	
C413	1-123-306-00	47 10V	elect
C414	1-102-963-00	33p	
C415	1-123-306-00	47 10V	elect
C416	1-102-963-00	33p	
C417	1-161-036-00	0.047	
C418	1-161-263-00	22p	
C419	1-123-317-00	22 16V	elect
C420	1-161-051-00	0.01	
C421	1-123-320-00	100 16V	elect
C422	1-123-319-00	47 16V	elect
C423	1-123-352-00	1 50V	elect
C424	1-108-792-00	0.001	mylar
C425	1-161-036-00	0.047	
C426	1-123-318-00	33 16V	elect
C427	1-123-320-00	100 16V	elect
C428	1-123-319-00	47 16V	elect

Ref. No.	Part No.	Description		Remark
C429	1-102-950-21	13p		
C430	1-161-036-00	0.047		
C431	1-108-569-00	0.0039		mylar
C432	1-123-317-00	22	16V	elect
C433	1-161-036-00	0.047		
C434	1-123-307-00	100	10V	elect
C435	1-108-563-00	0.0022		mylar
C436	1-108-792-00	0.001		mylar
C437	1-108-356-12	0.0082		mylar
C438	1-123-355-00	4.7	50V	elect
C439	1-123-317-00	22	16V	elect
C440	1-161-051-00	0.01		
D401-411	8-719-815-55	1S1555		
DL401	1-415-169-00	Delay		
IC401, 402	8-751-360-00	CX136A		
IC403	8-743-600-00	BX360		
IC404	8-743-610-00	BX361		
IC405	8-751-300-00	CX130		
L401, 402	1-407-686-00	2.7μH		
L403, 404	1-407-167-XX	68μH		
L405	1-407-169-XX	100μH		
LV401	1-407-569-00	CARRIER PHASE		
Q401–404	8-724-375-01	2SC403C		
⇒ Q405	8-729-663-47	2SC1364		
⇒ Q406	8-729-612-77	2SA1027R		
Q407–409	8-729-663-47	2SC1364		
⇒ Q410	8-729-612-77	2SA1027R		
Q411	8-729-663-47	2SC1364		
⇒ Q412	8-729-612-77	2SA1027R		
RV401, 402	1-224-644-XX	4.7k, adjustable; Y LEVEL, DC BIAS		
RV403	1-224-646-XX	22k, adjustable; C LEVEL		
RV404	1-224-647-XX	47k, adjustable; VCO		
T401	1-433-215-00	Transformer, 10.24MHz OSC		
X401	1-527-293-00	Crystal, 10.24MHz		

DS-3 BOARD

Ref. No.	Part No.	Description		Remark
♠	1-601-619-00	DS-3 BOARD		E-301
C001, 002	1-131-348-00	1.5	35V	tentalum
C003	1-123-319-00	47	16V	elect
♠CN001	1-508-845-00	6P Connector		
♠CN002	1-508-742-00	3P Connector		
D001-003	8-719-815-55	1S1555		
Q001-009	8-729-663-47	2SC1364		
R001	1-246-805-00	68k	1/8W	carbon
R002	1-246-797-00	15k	1/8W	carbon
R003, 004	1-246-803-00	47k	1/8W	carbon
R005	1-246-850-00	3.6k	1/8W	carbon
R006	1-246-849-00	3k	1/8W	carbon
R007	1-246-852-00	5.1k	1/8W	carbon
R008, 009	1-246-807-00	100k	1/8W	carbon
R010	1-246-803-00	47k	1/8W	carbon
R011	1-246-790-00	3.9k	1/8W	carbon
R012	1-246-771-00	100	1/8W	carbon
R013	1-246-794-00	8.2k	1/8W	carbon
R014	1-246-852-00	5.1k	1/8W	carbon
R015	1-246-837-00	300	1/8W	carbon
R016	1-246-790-00	3.9k	1/8W	carbon
R017	1-246-848-00	2.4k	1/8W	carbon
R018	1-246-851-00	4.3k	1/8W	carbon
R019	1-246-803-00	47k	1/8W	carbon
R020	1-246-795-00	10k	1/8W	carbon
R021–023	1-246-803-00	47k	1/8W	carbon
RV001	1-224-252-XX	10k adjustable, CUE		
RV002	1-224-252-XX	10k adjustable, REVIEW		

DT-4 BOARD

Ref. No.	Part No.	Description		Remark
♠	1-601-127-00	DT-4 Board		E-202
LF1	1-519-192-00	Tube, indicator		E-203

- Items marked "♠" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

DT-5 BOARD

Ref. No.	Part No.	Description	Remark
♠	A-6728-069-A	DT-5 Board, Complete	E-206
C101	1-108-377-00	0.01 100V myler	
C102	1-102-821-21	390p	
C103	1-102-975-00	100p	
C104	1-123-318-00	33 16V elect	
D101	8-719-815-55	1S1555	
D102	8-719-168-07	RD6.8E-B	
D103	8-719-815-55	1S1555	
IC101	8-759-153-20	μPD553C-020	
L101	1-407-206-XX	10mH	
Q101, 102	8-729-663-47	2SC1364	
X101	1-527-522-00	Radiator, ceramic	

DT-6 BOARD

Ref. No.	Part No.	Description	Remark
♠	A-6728-070-A	DT-6 Board, Complete	E-205
C201	1-101-004-00	0.01	
♠CN201	1-508-850-00	12P Connector	
D201-208	8-719-815-55	1S1555	
D209-214	8-719-812-41	TLR124	
Q201, 202	8-729-663-47	2SC1364	
⇒ Q203	8-729-612-77	2SA1027R	
Q204–213	8-729-663-47	2SC1364	
S201–207	1-552-438-00	Key, M, 10M, HOUR, RECORD TIME(MIN), CLOCK SET, TIMER SET, DAY	
S208	1-516-994-00	Lever slide, BRIGHT/DIM	

DT-7 BOARD

Ref. No.	Part No.	Description	Remark
♠	1-601-130-00	DT-7 Board	E-201
S301	1-552-267-00	Lever slide, POWER	E-204

FG-1 BOARD

Ref. No.	Part No.	Description	Remark
♠	1-600-101-11	FG-1 Board	E-502
⇒ DM6701	8-745-101-01	DM-101	

IF-7 BOARD

Ref. No.	Part No.	Description	Remark
♠	A-6721-035-A	IF-7 Board, complete	E-152
C001	1-102-528-00	91p	
C002	1-161-269-00	68p	
C003	1-101-880-00	47p	
C004	1-102-525-00	68p	
C005–008	1-102-121-00	0.0022	
C009	1-123-319-00	47 16V elect	
C010	1-102-121-00	0.0022	
C011	1-123-351-00	0.47 50V elect	
C012	1-161-051-00	0.01	
C013–015	1-102-121-00	0.0022	
C016	1-123-352-00	1 50V elect	
C017	1-102-936-00	3p	
C020	1-108-377-00	0.01 100V mylar	
C021	1-123-353-00	2.2 50V elect	
C022	1-108-377-00	0.01 100V mylar	
C023	1-123-320-00	100 16V elect	
C024–026	1-123-351-00	0.47 50V elect	
C027	1-101-804-00	10p 500V	
C028	1-123-267-00	2.2 160V elect	
C029	1-108-377-00	0.01 100V myler	

- Items marked "♠" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Ref. No.	Part No.	Description			Remark
C030	1-102-973-00	100p			
C041	1-123-323-00	470	16V	elect	
C042	1-101-004-00	0.01			
C043	1-161-263-00	22p			
C044	1-102-668-00	15p			
C045	1-102-116-00	680p			
C046	1-101-006-00	0.047			
C047	1-108-379-00	0.015	100V	mylar	
C048	1-123-318-00	33	16V	elect	
C051	1-102-493-00	62p			
C052	1-102-519-00	36p			
C053	1-101-576-00	1.5p			
C054–060	1-102-121-00	0.0022			
C061	1-102-809-00	7p			
C062	1-102-121-00	0.0022			
C063	1-102-936-00	3p			
C081	1-123-295-00	100	6.3V	elect	
C082	1-102-945-00	8p			
C084	1-123-320-00	100	16V	elect	
C085	1-123-319-00	47	16V	elect	
CF001	1-527-260-00	Ceramic Filter			
♠CN001	1-508-744-00	10P Connector			
♠CN002	1-508-910-21	12P Connector			
♠CN003	1-508-846-00	8P Connector			
CT001, 002	1-409-332-00	Ceramic Trap			
D001	8-759-157-40	μPC574J			
⇒ D002	8-719-331-10	UF1A			
D003	8-719-815-55	1S1555			
IC001	8-751-771-00	CX177B			
IC002	8-759-600-95	CX095C			
IC003	8-759-651-35	M5135P			
L001	1-425-613-00	Air-Core			
L002	1-407-189-XX	8.2μH			
L003	1-407-159-XX	15μH			
L004	1-407-178-XX	1μH			
L005	1-407-158-XX	12μH			
L006	1-407-172-XX	180μH			
L007	1-407-169-XX	100μH			
L008	1-407-184-XX	3.3μH			
L009	1-407-180-XX	1.5μH			
Q001	8-729-663-47	2SC1364			
Q002	8-723-302-00	2SK43			
Q003	8-722-383-40	2SK23A			
Q004	8-729-663-47	2SC1364			
Q005	8-760-413-10	2SC1475			
Q006	8-729-663-47	2SC1364			
R053	1-247-032-00	68	1/8 carbon (nonflamable)		
RV001	1-224-645-XX	10k, adjustable; 112V ADJ			
T001	1-409-213-00	VIFT-T1			
T002	1-409-318-00	VIFT-T2			
T003	1-409-319-00	VIFT-T3			
T004	1-404-117-00	VIFT-1			
T005	1-404-046-00	VIFT-2			
T006	1-403-731-00	VIFT-3			
T007	1-409-262-00	VIFT-7			
T031	1-446-295-00	Transformer, converter			
T041	1-403-360-00	SIFT-1			
T042	1-403-871-00	SIFT-2			
T051	1-403-904-00	AFT-1			
T052	1-403-905-00	AFT-2			

LA-1 BOARD

Ref. No.	Part No.	Description	Remark
♠	1-601-146-00	LA-1 Board	E-305
PL501	1-518-390-00	Lamp, pilot	E-304
S501	1-552-412-00	Keyboard, FAST PLAY	E-306

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LA-3 BOARD

Ref. No.	Part No.	Description	Remark
♦	1-601-148-00	LA-3 Board	E-160
♦CN501	1-508-734-00	3P Connector	
D501	8-719-812-41	TLR124	
S501	1-552-412-00	Key board, PROGRAM SELECT	
S502	1-516-778-XX	Slide, RECORD MODE	

LF-9 BOARD

Ref. No.	Part No.	Description	Remark
♦	1-600-015-00	LF-9 Board	E-209
⚠ C101	1-130-060-00	0.1 125V film	
♦CN101	1-560-033-00	3P Connector	
♦CN102	1-508-786-00	2P Connector	
F101	1-532-403-XX	Fuse 3.15A 125V	
⚠ L101	1-421-225-00	Coil, line filter	
⚠ R101	1-202-723-00	2.2M 1/2W Composition	

PS-4 BOARD

Ref. No.	Part No.	Description	Remark
♦	A-6723-128-A	PS-4 Board, complete	E-207
C001	1-123-403-00	4700 25V elect	
C002	1-123-328-00	4.7 25V elect	
C003	1-123-332-00	47 25V elect	
C004	1-108-365-00	0.001 100V mylar	
C005	1-123-351-00	0.47 50V elect	
C006	1-123-319-00	47 16V elect	
C007	1-123-404-00	10000 25V elect	
C008, 009	1-123-319-00	47 16V elect	
C010	1-123-403-00	4700 25V elect	
C011	1-123-337-00	1000 25V elect	
C012	1-123-329-00	10 25V elect	
C013, 014	1-123-316-00	10 16V elect	
C015	1-102-050-00	0.01 500V	
♦CN001	1-508-742-00	3P Connector	
♦CN002	1-508-744-00	10P Connector	
♦CN003	1-508-797-00	4P Connector	
♦CN005	1-508-766-00	4P Connector	
⚠ D001	8-719-941-13	M4B41-13	
⚠ D002	8-719-901-13	M4B31-13	
D003, 004	8-719-200-02	10E2	
D005	8-719-111-26	RD11E-B3Z	
D006	8-719-815-55	1S1555	
D007	8-719-162-07	RD6.2E	
D008	8-719-815-55	1S1555	
⚠ F001	1-532-348-00	Fuse 2.5A	
⚠ F002	1-532-349-XX	Fuse 4A	
Q001-003	8-729-663-47	2SC1364	
Q005, 006	8-729-663-47	2SC1364	
Q008	8-729-316-12	2SC1061	
Q009	8-729-663-47	2SC1364	
R015	1-212-358-11	0.68 1W metaloxide (nonflammable)	
R024	1-247-195-00	13 1/2W carbon (nonflammable)	
RV001	1-224-642-XX	1k, adjustable; 12V ADJ	

RC-4 BOARD

Ref. No.	Part No.	Description	Remark
♦	1-601-475-00	RC-4 Board	
D901	8-719-812-42	TLY124	
S901-903	1-552-412-00	Key board	
	1-551-818-00	Cord, with 6P DIN	

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The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

RP-1 BOARD

Ref. No.	Part No.	Description	Remark
♠	A-6711-209-A	RP-1 Board, complete	E-303
C001, 002	1-161-051-00	0.01	
C003	1-101-005-00	0.022	
C004	1-123-318-00	33 16V elect	
C005	1-123-351-00	0.47 50V elect	
C006	1-161-051-00	0.01	
C007	1-123-352-00	1 50V elect	
C009	1-101-006-00	0.047	
C010	1-161-051-00	0.01	
C011	1-123-352-00	1 50V elect	
C013	1-101-006-00	0.047	
C014	1-161-051-00	0.01	
C015–017	1-161-494-00	0.022	
C018	1-131-371-00	10 16V tantalum	
C020	1-123-353-00	2.2 50V elect	
C021	1-161-047-00	0.0047	
C022, 023	1-161-344-00	62p	
C024	1-123-316-00	10 16V elect	
C025	1-161-494-00	0.022	
C026	1-108-619-00	0.0027 100V mylar	
C027	1-161-319-00	470p	
C028	1-161-271-00	100p	
C029	1-161-319-00	470p	
→ C030	1-161-330-00	0.01	
C031	1-108-619-00	0.0027 100V mylar	
C032	1-131-371-00	10 16V tantalum	
C033	1-161-317-00	330p	
C034, 035	1-161-494-00	0.022	
♠CN001	1-508-797-00	4P Connector	
♠CN002	1-508-845-00	6P Connector	
♠CN003	1-508-744-00	10P Connector	
♠CN004	1-508-847-00	4P Connector	
D001-008	8-719-815-55	1S1555	
IC001	8-751-340-00	CX134A	
L001	1-407-157-XX	10μH	
L002, 003	1-408-158-00	6.8mH	
L004, 005	1-407-158-XX	12μH	
L006	1-407-706-00	120μH	
L007	1-407-198-XX	2.2mH	
L008	1-407-195-XX	1mH	
L009, 010	1-408-029-00	0.56μH	
LV001	1-407-286-00	Inductor, variable	
Q001	8-729-663-47	2SC1364	
⇒ Q002	8-729-612-77	2SA1027R	
⇒ Q003	8-729-612-77	2SA1027R	
⇒ Q004	8-729-663-47	2SC1364	
Q005	8-724-375-01	2SC403C	
Q006	8-729-663-47	2SC1364	
Q007, 008	8-765-422-00	2SK152	
Q009–011	8-729-663-47	2SC1364	
R001	1-247-028-00	8.2 1/8W carbon (nonflammable)	
R013	1-211-929-00	82 1/8W carbon (nonflammable)	
R017	1-211-421-00	39 1/8W carbon (nonflammable)	
R034	1-247-028-00	8.2 1/8W carbon (nonflammable)	
R051	1-247-028-00	8.2 1/8W carbon (nonflammable)	
RV001	1-224-642-XX	1k, adjustable; Y REC CURRENT	
RV002	1-224-644-XX	3.3k, adjustable; REC f RESP	
RV005–007	1-224-643-XX	2.2k, adjustable; PB CH B Q; PB CH A Q, CH BALANCE	
RV008	1-224-644-XX	4.7k, adjustable; DROP OUT COMP	
T001, 002	1-427-455-00	RFT	

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SA-3 BOARD

Ref. No.	Part No.	Description		Remark
♠	A-6713-079-A	SA-3 Board, complete		E-603
C001	1-123-316-00	10	16V	elect
C002, 003	1-108-381-00	0.022	100V	mylar
C004	1-108-385-00	0.047	100V	mylar
C005	1-161-323-00	0.001		
C006	1-101-006-00	0.047		
C007, 008	1-131-369-00	4.7	16V	tantalum
C009	1-101-006-00	0.047		
C010	1-131-345-00	0.47	35V	tantalum
C011	1-130-200-00	0.047		film
C012	1-108-369-00	0.0018	100V	mylar
C013	1-130-201-00	0.068		polyethylene
C014	1-130-200-00	0.047		film
C015	1-130-199-00	0.01		film
C016, 017	1-101-006-00	0.047		
C018	1-108-365-00	0.001	100V	mylar
C019, 020	1-131-369-00	4.7	16V	tantalum
C021	1-101-006-00	0.047		
C022	1-123-307-00	100	10V	elect
C024	1-101-006-00	0.047		
C025, 026	1-131-369-00	4.7	16V	tantalum
C027	1-123-328-00	4.7	25V	elect
C028	1-131-347-00	1	35V	tantalum
C029	1-101-006-00	0.047		
C030	1-131-345-00	0.47	35V	tantalum
C031	1-101-003-00	0.0047		
C032	1-123-351-00	0.47	50V	elect
C033	1-123-352-00	1	50V	elect
C034	1-161-047-00	0.0047		
C035	1-161-323-00	0.001		
C036	1-123-305-00	33	10V	elect
C038	1-131-345-00	0.47	35V	tantalum
C039	1-131-346-00	0.68	35V	tantalum
C040	1-131-344-00	0.33	35V	tantalum
C041	1-161-025-11	0.1		
C042	1-161-051-00	0.01		
C043	1-123-320-00	100	16V	elect
C044	1-101-006-00	0.047		
C045	1-123-351-00	0.47	50V	elect
C046	1-130-201-00	0.068		polyethylene
C047	1-161-323-00	0.001		
C048	1-130-201-00	0.068		polyethylene
C049	1-123-320-00	100	16V	elect
C050	1-123-296-00	220	6.3V	elect
C051, 052	1-123-316-00	10	16V	elect
C053	1-123-320-00	100	16V	elect
C054	1-161-265-00	33p		
C055	1-123-298-00	470	6.3V	elect
C056	1-161-494-00	0.022		
C057	1-101-006-00	0.047		
C058	1-123-320-00	100	16V	elect
C059	1-123-316-00	10	16V	elect
C060	1-123-317-00	22	16V	elect
C061, 062	1-131-361-00	2.2	20V	tantalum
C063	1-101-006-00	0.047		
C064	1-123-320-00	100	16V	elect
C065	1-123-317-00	22	16V	elect
C066	1-131-345-00	0.47	35V	tantalum
C067	1-123-352-00	1	50V	elect
C068	1-130-200-00	0.047		film
C069	1-130-224-00	0.015		polyethylene
C070, 071	1-161-271-00	100p		
C072	1-123-317-00	22	16V	elect
C073, 074	1-123-328-00	4.7	25V	elect
C075, 076	1-101-006-00	0.047		
C077	1-101-001-00	0.001		
C078	1-123-353-00	2.2	50V	elect
C079	1-123-328-00	4.7	25V	elect
C080	1-131-361-00	2.2	20V	tantalum
C082	1-123-317-00	22	16V	elect
C083	1-123-328-00	4.7	25V	elect
C084–087	1-123-316-00	10	16V	elect
C088	1-101-006-00	0.047		
C089	1-123-316-00	10	16V	elect
C090	1-101-004-00	0.01		
C300	1-101-059-00	510p		
C301	1-161-317-00	330p		
C302	1-108-792-00	0.001		mylar
C303	1-123-318-00	33	16V	elect
C304	1-123-352-00	1	50V	elect
C306	1-123-295-00	100	6.3V	elect
C307	1-123-316-00	10	16V	elect
C308	1-123-319-00	47	16V	elect
C309	1-161-271-00	100p		
C310	1-161-323-00	0.001		
C311	1-123-316-00	10	16V	elect
C312	1-123-320-00	100	16V	elect
C313	1-123-328-00	4.7	25V	elect
C314	1-123-311-00	1000	10V	elect
C315	1-108-624-00	0.0068	100V	mylar
C316	1-108-383-00	0.033	100V	mylar
C317	1-108-387-00	0.068	100V	mylar
C318	1-108-365-00	0.001	100V	mylar
C319	1-108-804-00	0.01		mylar
C320	1-108-589-00	0.027		mylar

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Ref. No.	Part No.	Description			Remark
C321	1-161-323-00	0.001			
C322	1-123-352-00	1	50V	elect	
C323	1-108-377-00	0.01	100V	mylar	
C324, 325	1-123-319-00	47	16V	elect	
C326	1-161-263-00	22p			
C327, 328	1-123-316-00	10	16V	elect	
C329	1-108-623-00	0.0056	100V	mylar	
C330	1-123-316-00	10	16V	elect	
C331	1-161-269-00	68p			
C332	1-123-328-00	4.7	25V	elect	
C333	1-161-327-00	0.0033			
C334	1-123-319-00	47	16V	elect	
C335	1-123-320-00	100	16V	elect	
C336	1-123-317-00	22	16V	elect	
C337	1-101-006-00	0.047			
C338	1-123-318-00	33	16V	elect	
C339	1-123-316-00	10	16V	elect	
C340	1-161-272-00	120p			
C341	1-123-316-00	10	16V	elect	
C342	1-108-365-00	0.001	100V	mylar	
C343	1-161-316-00	270p			
C344	1-107-166-00	62p	500V	mica	
C345	1-108-583-00	0.015		mylar	
C346	1-108-591-00	0.033		mylar	
C347	1-129-709-00	0.0039	630V	film	
C348	1-108-383-00	0.033	100V	mylar	
C349	1-108-381-00	0.022	100V	mylar	
C350	1-123-319-00	47	16V	elect	
C351	1-123-320-00	100	16V	elect	
C352	1-102-973-00	100p			
♦CN001	1-508-910-11	12P Connector			
♦CN002–004	1-508-742-00	3P Connector			
♦CN007	1-508-743-00	5P Connector			
♦CN008	1-508-846-00	8P Connector			
♦CN009	1-508-742-00	3P Connector			
D001–004	8-719-815-55	1S1555			
D005	8-719-162-07	RD6.2E			
D006–019	8-719-815-55	1S1555			
D021, 022	8-719-815-55	1S1555			
D024–032	8-719-815-55	1S1555			
⇒ D033	8-719-931-13	EQB01-13			
D061	8-719-815-80	1S1587			
D062–070	8-719-815-55	1S1555			
IC001	8-751-860-00	CX186			
IC002	8-751-430-00	CX143A			
IC003	8-759-271-20	TA7120P			
IC004	8-759-240-11	TC4011BP			
IC005	8-759-240-27	TC4027BP			

Ref. No.	Part No.	Description			Remark
L001	1-407-157-XX	10μH			
L061	1-407-718-00	1.2mH			
L062, 063	1-407-506-31	15mH			
L064	1-407-195-XX	1mH			
LV061	1-407-286-00	Inductor, variable DUB BIAS			
LV062	1-407-240-00	Inductor, variable BIAS TRAP			
⇒ Q001	8-729-612-77	2SA1027R			
⚠ Q002	8-729-173-37	2SA733-P			
Q003, 004	8-729-663-47	2SC1364			
⇒ Q005	8-729-612-77	2SA1027R			
Q006	8-729-663-47	2SC1364			
⇒ Q007	8-729-612-77	2SA1027R			
Q008	8-729-663-47	2SC1364			
Q010, 011	8-729-663-47	2SC1364			
⇒ Q012, 013	8-729-612-77	2SA1027R			
Q014–021	8-729-663-47	2SC1364			
Q024–030	8-729-663-47	2SC1364			
⇒ Q031	8-729-612-77	2SA1027R			
Q032–036	8-729-663-47	2SC1364			
Q038–040	8-729-663-47	2SC1364			
⇒ Q041	8-729-612-77	2SA1027R			
Q043–046	8-729-663-47	2SC1364			
⇒ Q047	8-729-612-77	2SA1027R			
Q048–050	8-729-663-47	2SC1364			
Q053, 054	8-729-663-47	2SC1364			
⇒ Q055	8-729-612-77	2SA1027R			
Q056–059	8-729-663-47	2SC1364			
Q061	8-729-663-47	2SC1364			
Q062, 063	8-729-665-47	2SC1362			
Q064	8-729-663-47	2SC1364			
Q065, 066	8-729-663-47	2SC1364			
Q067	8-729-663-47	2SC1364			
Q068	8-729-665-47	2SC1362			
Q069–071	8-729-663-47	2SC1364			
⇒ Q072	8-760-523-10	2SA772-23			
Q073–075	8-729-663-47	2SC1364			
Q076	8-760-413-10	2SC1475			
⇒ Q077–079	8-729-612-77	2SA1027R			
R009	1-202-472-00	5.1M	1/4W	composition	
R014	1-214-156-00	10k	1/4W	metal oxide	
R037	1-214-176-00	68k	1/4W	metal oxide	
R039	1-212-710-00	220k	1/2W	metal oxide	
R047	1-214-168-00	33k	1/4W	metal oxide	

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Ref. No.	Part No.	Description	Remark
R049	1-214-170-00	39k 1/4W metal oxide	
R076	1-214-172-00	47k 1/4W metal oxide	
R103	1-214-176-00	68k 1/4W metal oxide	
R110	1-214-178-00	82k 1/4W metal oxide	
R174	1-214-150-00	5.6k 1/4W metal oxide	
R185	1-214-158-00	12k 1/4W metal oxide	
R228	1-214-149-00	5.1k 1/4W metal oxide	
RV001–003	1-224-647-XX	47k, adjustable; PG(B), PG(B), LOCK PHASE	
RV004–006	1-224-253-XX	22k, adjustable; 3H CAP FREE; 1H CAP FREE; TRACON	
RV007	1-224-644-XX	4.7k, adjustable; SPEED DET	
RV008	1-224-644-XX	3.3k, adjustable; DRUM FREE	
RV009–011	1-224-254-XX	47k, adjustable; X3 NOISE POS; X3 CAP FREE; 2H CAP FREE	
RV061–063	1-224-646-XX	22k, adjustable; PB EQ; REC LEVEL; PB LEVEL	
RV064	1-226-497-00	100k, variable; TRACKING	
RV065	1-224-256-XX	220k, adjustable; REC BIAS	
S001	1-552-836-00	Slide; REC/PB	
S002	1-552-835-00	Slide; REC/PB	
S003	1-552-617-00	Miniature, DUB + REC	
S004	1-552-821-00	Slide; 1H/2H+3H	
T061	1-405-670-00	Transformer, BIAS OSC	

SW-3 BOARD

Ref. No.	Part No.	Description	Remark
♠	1-601-149-00	SW-3 Board	E-551
♠CN401, 402	1-508-742-00	3P Connector	
S401-404	1-553-035-00	Lever; EJECT. REW. PLAY. FF	

SY-5 BOARD

Ref. No.	Part No.	Description	Remark
♠	A-6717-133-A	SY-5 Board, complete	E-310
C001	1-161-185-00	0.01	
C002	1-123-352-00	1 50V elect	
C003	1-161-185-00	0.01	
C004	1-123-353-00	2.2 50V elect	
C005, 006	1-123-352-00	1 50V elect	
C007	1-129-794-00	0.0033 100V film	
C008–010	1-123-352-00	1 50V elect	
C011	1-129-794-00	0.0033 100V film	
C012	1-123-317-00	22 16V elect	
C013	1-161-185-00	0.01	
C014	1-123-319-00	47 16V elect	
C015	1-123-320-00	100 16V elect	
C016	1-123-307-00	100 10V elect	
C017	1-123-317-00	22 16V elect	
C018, 019	1-123-328-00	4.7 25V elect	
C020	1-161-021-00	0.047	
C021–023	1-161-089-00	0.01 100V	
♠CN001	1-508-846-00	8P Connector	
♠CN002	1-508-848-00	6P Connector	
♠CN003	1-508-744-00	10P Connector	
♠CN004	1-508-910-21	12P Connector	
♠CN005	1-508-910-31	12P Connector	
♠CN006	1-508-736-00	10P Connector	
♠CN007	1-508-910-11	12P Connector	
♠CN008	1-508-847-00	4P Connector	
♠CN009–013	1-508-742-00	3P Connector	
D001–006	8-719-815-55	1S1555	
D007, 008	8-719-200-02	10E2	
⇒ D009	8-719-931-13	EQB01-08	
D010	8-719-815-55	1S1555	
D011–015	8-719-200-02	10E2	
D016–018	8-719-815-55	1S1555	
D019	8-719-200-02	10E2	
D020–023	8-719-815-55	1S1555	
D024	8-719-200-02	10E2	
D025	8-719-815-55	1S1555	
D026	8-719-200-02	10E2	
D027–029	8-719-815-55	1S1555	
D030	8-719-200-02	10E2	
D031	8-719-200-10	10E10P	
D032–034	8-719-815-55	1S1555	

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Ref. No.	Part No.	Description	Remark
⇒ D035	8-719-931-13	EQB01–13	
⇒ D036	8-719-930-12	EQB01–12Z	
IC001	8-759-146-37	μPD546C-037	
IC002, 003	8-743-420-00	BX342	
⇒ IC004	8-759-140-01	μPD4001C	
L001, 002	1-407-212-XX	33mH	
L003	1-405-876-00	OSC	
⇒ Q001, 002	8-729-612-77	2SA1027R	
Q003, 004	8-729-663-47	2SC1364	
Q005	8-729-316-12	2SC1061	
⚠ Q006	8-760-333-10	2SC1474-33	
Q007	8-729-663-47	2SC1364	
Q008	8-760-335-10	2SC1474	
⚠ Q009	8-760-333-10	2SC1474-33	
Q010	8-729-663-47	2SC1364	
Q011	8-760-335-10	2SC1474	
⚠ Q012	8-760-333-10	2SC1474-33	
Q013	8-729-663-47	2SC1364	
Q014, 015	8-760-335-10	2SC1474	
Q016	8-729-663-47	2SC1364	
Q017	8-760-335-10	2SC1474	
⚠ Q018	8-760-333-10	2SC1474-33	
Q019–023	8-729-663-47	2SC1364	
⚠ Q024	8-729-173-37	2SA733-P	
⚠ Q025	8-729-316-16	2SC1061-C	
Q026	8-729-663-47	2SC1364	
⚠ Q027	8-763-113-00	2SC1761-4	
⇒ Q028	8-729-612-77	2SA1027R	
⚠ Q029	8-729-663-47	2SC1364-7	
⚠ Q030	8-763-113-00	2SC1761-4	
Q031–033	8-729-663-47	2SC1364	
⚠ Q034, 035	8-760-333-10	2SC1474-33	
Q036–038	8-729-663-47	2SC1364	
R014	1-231-434-00	Allay	
⚠ R015–019	1-211-929-00	82 1/8W carbon (nonflammable)	
R020	1-231-434-00	Allay	
R021	1-231-435-00	Allay	
R040	1-212-356-00	0.47 1W metal oxide (nonflammable)	
R046	1-211-929-00	82 1/8W carbon (nonflammable)	
⚠ R053, 054	1-246-981-00	4.7 1/8W carbon (nonflammable)	
⚠ R062	1-246-981-00	4.7 1/8W carbon (nonflammable)	

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SY-6 BOARD

Ref. No.	Part No.	Description	Remark
●	A-6717-134-A	SY-6 Board, complete	E-308
C502	1-123-352-00	1 50V elect	
C505	1-123-351-00	0.47 50V elect	
C508	1-123-319-00	47 16V elect	
C509	1-123-354-00	3.3 50V elect	
C510	1-161-181-51	0.0047	
C511	1-123-353-00	2.2 50V elect	
C512	1-102-824-00	470p	
C513	1-123-353-00	2.2 50V elect	
C514	1-102-824-00	470p	
●CN501	1-508-735-21	5P Connector	
●CN502	1-508-847-00	4P Connector	
●CN503	1-508-734-00	3P Connector	
D501–504	8-719-815-55	1S1555	
IC501	8-759-240-13	TC4013BP	
Q501–512	8-729-663-47	2SC1364	

TR-1 BOARD

Ref. No.	Part No.	Description	Remark
●	1-600-038-00	TR-1 Board	E-208
⚠ Q6301	8-729-331-53	2SC2315	

TR-2 BOARD

Ref. No.	Part No.	Description	Remark
●	1-600-038-00	TR-2 Board	E-456
⚠ Q6311	8-729-331-53	2SC2315	

TS-4 BOARD

Ref. No.	Part No.	Description	Remark
♦	1-601-140-00	TS-4 Board	E-159
C301	1-121-806-00	10 16V elect (nonpolarized)	
C302	1-123-352-00	1 50V elect	
C303	1-123-316-00	10 16V elect	
NE301–314	1-519-154-00	Lamp, neon	
S301	1-553-036-00	Push; CHANNEL SELECT	
S302	1-516-226-00	Slide; AFT	
RV301	1-464-100-11	Preset Unit, 14-CHANNEL	

TU-5 BOARD

Ref. No.	Part No.	Description	Remark
♦	A-6721-033-A	TU-5 Board, complete	E-151
C101, 102	1-108-389-00	0.1 100V mylar	
C103–105	1-123-329-00	10 25V elect	
C106	1-123-318-00	33 16V elect	
D101	8-719-815-55	1S1555	
L101	1-407-165-XX	47μH	
Q101–105	8-729-663-47	2SC1364	
RV101, 102	1-224-642-XX	1k, adjustable; VHF AGC; UHF AGC	

YC-4 BOARD

Ref. No.	Part No.	Description	Remark
♦	A-6711-211-A	YC-4 Board, complete	E-604
C001	1-123-307-00	100 10V elect	
C002	1-161-051-00	0.01	
C003	1-161-494-00	0.022	
C004	1-161-021-00	0.047	
C005	1-131-343-00	0.22 35V tantalum	
C006	1-161-013-00	0.01	
C007	1-102-959-00	22p	
C008	1-161-021-00	0.047	
C009	1-102-962-00	30p	
C010	1-161-021-00	0.047	
C012	1-161-021-00	0.047	
C013–016	1-161-051-00	0.01	
C017	1-161-005-00	0.0022	
C018	1-161-039-00	0.001	
C019	1-123-295-00	100 6.3V elect	
C020	1-161-051-00	0.01	
C021	1-123-319-00	47 16V elect	
C022	1-161-051-00	0.01	
C023	1-123-319-00	47 16V elect	
C024	1-102-529-00	100p	
C025	1-161-017-00	0.022	
C026	1-161-006-00	0.0027	
C027	1-161-004-00	0.0018	
C028	1-123-316-00	10 16V elect	
C029	1-161-271-00	100p	
C030	1-161-272-00	120p	
C031	1-123-296-00	220 6.3V elect	
C032	1-123-352-00	1 50V elect	
C033	1-161-255-00	4.7p	
C034	1-161-262-00	18p	
C035	1-123-307-00	100 10V elect	
C036	1-102-953-00	18p	
C037	1-102-808-00	6p	
C038	1-123-296-00	220 6.3V elect	
C039	1-161-339-00	24p	
C040	1-161-317-00	330p	
C041	1-123-319-00	47 16V elect	
C042	1-123-307-00	100 10V elect	
C044	1-123-307-00	100 10V elect	
C045	1-161-051-00	0.01	
C046	1-102-980-00	270p	
C047	1-101-059-00	510p	
C048	1-102-980-00	270p	
C049	1-102-820-00	330p	
C050	1-123-296-00	220 6.3V elect	
C051	1-161-330-00	0.01	
C052	1-123-295-00	100 6.3V elect	
C053	1-123-319-00	47 16V elect	
C054	1-123-311-00	1000 10V elect	
C056	1-123-307-00	100 10V elect	
C058	1-123-319-00	47 16V elect	
C059	1-161-259-00	10p	
C060, 061	1-102-965-21	39p	
C062	1-161-256-00	5.6p	
C063	1-161-269-00	68p	

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Ref. No.	Part No.	Description		Remark
C064	1-161-268-00	56p		
C065	1-161-315-00	220p		
C066	1-161-327-00	0.0033		
C067, 068	1-123-318-00	33	16V	elect
C069	1-161-021-00	0.047		
C070	1-161-051-00	0.01		
C071	1-161-013-00	0.01		
C072, 073	1-123-319-00	47	16V	elect
C074	1-161-013-00	0.01		
C075	1-161-025-00	0.1		
C076	1-123-316-00	10	16V	elect
C077	1-123-305-00	33	10V	elect
C078	1-161-264-00	27p		
C079	1-102-530-00	120p		
C080	1-123-320-00	100	16V	elect
C081	1-161-051-00	0.01		
C082	1-102-962-00	30p		
C083	1-161-051-00	0.01		
C084	1-102-935-00	2p		
C085	1-161-363-00	11p		
C086, 087	1-161-051-00	0.01		
C088	1-123-353-00	2.2	50V	elect
C089	1-161-494-00	0.022		
C090	1-131-343-00	0.22	35V	tantalum
C091	1-161-322-00	820p		
C092	1-123-319-00	47	16V	elect
C093	1-161-013-00	0.01		
C094	1-161-051-00	0.01		
C095	1-161-013-00	0.01		
C096, 097	1-161-271-00	100p		
C098	1-102-117-00	820p		
C099	1-161-051-00	0.01		
C100, 101	1-123-351-00	0.47	50V	elect
C104	1-102-824-00	470p		
C105	1-123-351-00	0.47	50V	elect
C106	1-123-316-00	10	16V	elect
C107, 108	1-161-321-00	680p		
C109	1-102-962-00	30p		
C110	1-123-316-00	10	16V	elect
C111	1-123-319-00	47	16V	elect
C112	1-161-013-00	0.01		
C113	1-108-369-00	0.0022	100V	mylar
C114	1-102-116-00	680p		
C115	1-108-624-00	0.0068	100V	mylar
C116	1-123-351-00	0.47	50V	elect
C117	1-161-048-11	0.0056		
C118	1-102-820-00	330p		
C119	1-102-973-00	100p		
C120	1-102-816-00	120p		
C121	1-161-051-00	0.01		
C122	1-102-945-00	8p		
C123	1-161-051-00	0.01		
C124	1-161-271-00	100p		
C125	1-123-354-00	3.3	50V	elect
C126	1-123-307-00	100	10V	elect
C127	1-161-051-00	0.01		
C128	1-123-319-00	47	16V	elect
C129	1-123-328-00	4.7	25V	elect
C130	1-161-323-00	0.001		
C131	1-161-047-00	0.0047		
C132	1-161-271-00	100p		
C133, 134	1-131-361-00	2.2	20V	tantalum
C135	1-123-307-00	100	10V	elect
C137	1-123-307-00	100	10V	elect
C139, 140	1-161-051-00	0.01		
C141	1-123-352-00	1	50V	elect
C142	1-123-306-00	47	10V	elect
C143	1-102-980-00	270p		
C146	1-102-821-00	360p		
C147	1-102-824-00	470p		
C148	1-101-059-00	510p		
C149	1-161-021-00	0.047		
C150	1-102-976-00	180p		
C153	1-161-051-00	0.01		
C152	1-102-821-00	360p		
C154	1-101-059-00	510p		
C155	1-123-316-00	10	16V	elect
C157	1-102-972-00	91p		
C158	1-102-966-00	43p		
C159	1-102-816-00	120p		
C160	1-123-307-00	100	10V	elect
C161	1-123-316-00	10	16V	elect
C162	1-161-317-00	330p		
C163	1-102-976-00	180p		
C164	1-161-051-00	0.01		
C165	1-123-319-00	47	16V	elect
C166	1-102-963-00	33p		
C167	1-102-981-00	300p		
C168	1-102-820-00	330p		
C169	1-123-306-00	47	10V	elect
C170	1-123-322-00	330	16V	elect
C171	1-102-977-00	200p		
C172	1-102-820-00	330p		
C174	1-108-367-00	0.0015	100V	mylar
C176	1-102-966-00	43p		
C178	1-102-965-21	39p		
C180	1-123-351-00	0.47	50V	elect
C181	1-123-316-00	10	16V	elect
C183	1-130-224-00	0.015		polyethylene
C184	1-161-263-00	22p		

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Ref. No.	Part No.	Description			Remark
C186	1-161-013-00	0.01			
C187	1-161-257-00	6.8p			
C188	1-102-966-00	43p			
C189	1-161-317-00	330p			
C190–192	1-161-051-00	0.01			
C193	1-102-978-00	220p			
C195	1-161-267-00	47p			
C196	1-123-352-00	1	50V	elect	
C198	1-161-013-00	0.01			
C199	1-101-884-00	56p			
C200	1-161-013-00	0.01			
C201	1-123-352-00	1	50V	elect	
C202	1-131-344-00	0.33	35V	tantalum	
C203	1-123-316-00	10	16V	elect	
C204	1-161-013-00	0.01			
C205–208	1-123-306-00	47	10V	elect	
C209	1-161-323-00	0.001			
C210, 211	1-161-051-00	0.01			
C212, 213	1-123-318-00	33	16V	elect	
C214	1-161-013-00	0.01			
C215	1-123-316-00	10	16V	elect	
C216	1-123-307-00	100	10V	elect	
C217	1-102-951-00	15p			
C218	1-161-013-00	0.01			
C219	1-161-021-00	0.047			
♠CN001	1-508-744-00	10P Connector			
♠CN002	1-508-797-00	4P Connector			
♠CN003	1-508-845-00	6P Connector			
♠CN005	1-508-846-00	8P Connector			
♠CN006	1-508-744-00	10P Connector			
♠CN008	1-508-736-00	10P Connector			
♠CN009	1-508-735-00	5P Connector			
CNJ001, 002	1-507-588-00	Jack, VIDEO IN; VIDEO OUT			
CNJ003–005	1-507-251-XX	Jack, AUDIO IN; MIC			
D001–007	8-719-815-55	1S1555			
D009–018	8-719-815-55	1S1555			
D023	8-719-815-55	1S1555			
D027–034	8-719-815-55	1S1555			
DL001	1-415-065-00	Delay Line			
DL002	1-415-159-00	Delay Line (1H)			
IC001	8-751-870-00	CX187			
IC002	8-751-880-00	CX188			
IC003	8-751-960-00	CX196A			
IC004	8-759-684-78	M58478P			
IC005	8-751-300-00	CX130			

Ref. No.	Part No.	Description	Remark
IC006	8-751-350-00	CX135	
IC007	8-743-580-00	BX358	
IC008	8-743-640-00	BX364	
L001	1-407-159-XX	15μH	
L002, 003	1-407-696-00	18μH	
L004	1-407-718-00	1.2mH	
L005	1-407-171-XX	150μH	
L006	1-407-172-XX	180μH	
L007	1-407-709-00	220μH	
L008	1-407-172-XX	180μH	
L009	1-407-189-XX	8.2μH	
L010	1-407-158-XX	12μH	
L011	1-407-162-XX	27μH	
L012	1-407-569-00	10μH	
L013	1-407-169-XX	100μH	
L014	1-407-706-00	120μH	
L015	1-407-169-XX	100μH	
L016	1-407-167-XX	68μH	
L017	1-407-169-XX	100μH	
L018	1-407-171-XX	150μH	
L019	1-407-747-11	56μH	
L020	1-407-165-XX	47μH	
L021	1-407-709-00	220μH	
L022	1-407-167-XX	68μH	
L023	1-407-503-00	8.2mH	
L024	1-407-168-XX	82μH	
L025	1-407-191-XX	470μH	
L026	1-407-157-XX	10μH	
L027, 028	1-407-164-XX	39μH	
L029	1-407-706-00	120μH	
L030	1-407-161-XX	22μH	
L032	1-407-169-XX	100μH	
L033	1-407-172-XX	180μH	
L034	1-407-171-XX	150μH	
L035	1-407-168-XX	82μH	
L036	1-407-189-XX	8.2μH	
L037	1-407-171-XX	150μH	
L038	1-407-164-XX	39μH	
L041	1-407-163-XX	33μH	
L042	1-407-168-XX	82μH	
⇒ Q001–003	8-729-612-77	2SA1027R	
⇒ Q004	8-729-612-77	2SA1027R	
Q005	8-724-375-01	2SC403C	
⇒ Q006, 007	8-729-612-77	2SA1027R	
Q008	8-729-663-47	2SC1364	

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Ref. No.	*Part No.*	*Description*	*Remark*
Q012	8-724-375-01	2SC403C	
⇒ Q013	8-729-612-77	2SA1027R	
⇒ Q014–019	8-729-663-47	2SC1364	
⇒ Q020	8-729-612-77	2SA1027R	
Q021	8-729-663-47	2SC1364	
⇒ Q022	8-761-663-47	2SC1364	
Q024	8-729-663-47	2SC1364	
⇒ Q025, 026	8-729-612-77	2SA1027R	
Q027–030	8-729-663-47	2SC1364	
Q033	8-724-375-01	2SC403C	
Q034	8-724-375-01	2SC403C	
Q035, 036	8-729-663-47	2SC1364	
Q037	8-724-375-01	2SC403C	
⇒ Q038	8-729-612-77	2SA1027R	
Q039–041	8-729-663-47	2SC1364	
⇒ Q043, 044	8-729-612-77	2SA1027R	
Q045	8-724-375-01	2SC403C	
⇒ Q046–048	8-729-612-77	2SA1027R	
Q049, 050	8-729-663-47	2SC1364	
Q051	8-729-612-77	2SA1027R	
Q052, 053	8-724-375-01	2SC403C	
Q054, 055	8-729-663-47	2SC1364	
⇒ Q057	8-729-612-77	2SA1027R	
Q058	8-724-375-01	2SC403C	
Q059	8-729-663-47	2SC1364	
Q060	8-724-375-01	2SC403C	
⇒ Q061	8-729-612-77	2SA1027R	
Q062	8-729-663-47	2SC1364	
Q063	8-724-375-01	2SC403C	
Q064-067	8-729-663-47	2SC1364	
Q068	8-724-375-01	2SC403C	
Q069–076	8-729-663-47	2SC1364	
R007	1-202-471-00	4.7M 1/4W composition	
R073	1-244-860-00	300 1/2W carbon	
R114	1-210-819-00	1.8M 1/4W composition	
R242	1-246-704-00	120k 1/2W carbon	
RV001	1-224-641-XX	470, adjustable; REC CHROMA	
RV002	1-224-642-XX	1k, adjustable; NOI CAN	
RV003	1-224-643-XX	2.2k, adjustable; VIDEO LEVEL	
RV004	1-224-641-XX	470, adjustable; COMB I	
RV005	1-224-643-XX	2.2k, adjustable; PB EMPH	
RV007	1-224-642-XX	1k, adjustable; ACC	
RV008	1-224-646-XX	22k, adjustable; CAR BAL	
RV009	1-224-645-XX	10k, adjustable; VCO	
RV010	1-224-551-00	220k, adjustable; HARD CLAMP	

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The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

Ref. No.	*Part No.*	*Description*	*Remark*
RV011, 012	1-224-642-XX	1k, adjustable; DARK CLIP; WHITE CLIP	
RV014, 015	1-224-641-XX	470, adjustable; DEVIATION; CARRIER	
RV016	1-224-643-XX	2.2k, adjustable; PEAK AGC	
RV017	1-224-648-XX	100k, adjustable; HALF H SHIFT	
RV018	1-224-645-XX	10k, adjustable; SYNC AGC	
S001	1-552-821-00	Slide; PCM	
S002	1-553-034-00	Slide; CAMERA/TUNER	
T001	1-425-996-00	PBT-7 4.96MHz	
T002	1-426-024-00	BPT-6 3.58MHz	
T003	1-415-083-00	EQT-1	
T004	1-231-412-00	Filter Block	
T005	1-425-785-31	BAT	
T006	1-411-100-00	BPT-1	
T007	1-411-104-00	BPT-5	
T008	1-425-993-00	BPT	
T009	1-425-992-00	EQT	
X001	1-527-154-00	Crystal OSC 3.57954MHz	

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Ref. No.	*Part No.*	*Description*	*Remark*
C9601, 9602	1-101-006-00	0.047	
CN6601	1-526-527-00	Connector, REMOTE	E-607
CN6602	1-507-195-21	Jack, CAMERA PAUSE	E-606
⚠CN9501	1-561-347-00	AC OUTLET	E-605
L9501	1-543-145-00	FWD sensor	E-501
L9502	1-543-145-00	REW sensor	E-302
M9502	8-838-008-00	CAPSTAN MOTOR BHF-1100D	E-455
PL9501	1-518-393-00	PILOT, POWER	
PL9502	1-518-391-00	PILOT, PAUSE	
PL9503	1-518-392-00	PILOT, RECORD	
S9501	1-552-663-00	Miniature, CASSETTE IN	E-555
S9502	1-552-665-00	Miniature, THREADING END	E-457

Ref. No.	Part No.	Description	Remark
S9503	1-552-822-00	Slide, MEMORY	E-309
S9504	1-514-722-XX	Miniature, PAUSE	E-102
S9505	1-552-837-00	RF SELECTOR	E-158
⚠SL9501	1-454-230-00	Solenoid, STOP	E-101
⚠SL9502	1-454-216-00	Solenoid, REW/REV	E-554
⚠SL9503	1-454-215-00	Solenoid, FF/CUE	E-553
⚠SL9504	1-454-233-00	Solenoid, FWD	E-552
⚠SL9505	1-454-217-00	Solenoid, PINCH	E-454
⚠SL9506	1-454-185-21	Solenoid, BRAKE	E-402
⚠SL9507	1-454-229-00	Solenoid, SELECT	E-401
⚠T9501	1-446-477-00	Transformer, POWER	E-210
	1-463-264-00	UHF/VHF TUNER (BT-852)	E-153
	1-464-094-00	RF MODULATOR (RFU-534A)	E-154
	1-536-610-00	ANTENNA TERMINAL	E-155
	1-548-534-00	TAPE COUNTER	E-307
♠	1-551-110-00	PIN CABLE	
♠	1-551-112-00	PIN CABLE	
♠	1-551-752-00	PIN CABLE	E-156
♠	1-551-754-51	PIN CABLE	E-157
⚠	1-551-964-00	POWER CORD	E-601

- Items marked "♠" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and ⚠ mark are critical for safety. Replace only with part number specified.

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